Risk Management Guidelines
for
Roadway Tort Liability

A
Workshop
Cooperatively Developed By

Montana Municipal Insurance Authority

Montana Association of Counties

Montana Department of Transportation

Montana Department of Administration

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RISK MANAGEMENT GUIDELINES FOR
ROADWAY TORT LIABILITY

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Preface

The nation's driving population has, in recent years, become increasingly intolerant of any and all roadway defects and hazards which may, or may not, pose a threat to them or their property. The caseloads in the nation's courtrooms have been increasing at a staggering rate and it does not appear that this rate will level off in the near future. Individuals are bringing claims and suits against public entities for nearly any reason. The large number of claims has resulted in correspondingly large sums of money being spent on claim handling, court proceedings, attorney's fees, and judgments or awards. This places an added burden on public entities since most of the monies to fund these areas are generated by one method, tax receipts.

Public entities across Montana are not immune to the rash of claims lawsuits that are surfacing across the nation. The fact that the plaintiff may have been partially or wholly responsible for the accident is of little consequence in controlling the filing of claims and legal actions. In many cases plaintiff's attorneys point the accusing finger at a public entity in an attempt to reach that proverbial "deep pocket" of public entities.

The abolishment of sovereign immunity has allowed the public to bring suit against public entities. Yet, public treasuries are just that, monies from the tax payer. Government employees and officials have a right and a duty to protect their public entity from unjust accusations and resulting lawsuits. Unfortunately, public entities have not always been successful in defending themselves. Perhaps entities were not aware that precautionary steps that could be taken. Perhaps the demands of the public, are placing too many demands upon limited governmental resources. Or, perhaps it is assumed that sooner or later, the problem will just go away. Whatever the reason, it is obvious that something has to be done to address the rising tide of claims against public entities. The process of identifying risks and minimizing exposure is called risk management. Guidelines for this process, focusing on roadway liability, is the subject of this workshop.

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Disclaimer

The material presented in this notebook was obtained through various publications and from the experiences and opinions of the authors. The opinions expressed herein do not necessarily represent those of the Montana Department of Transportation, the Montana Risk Management and Tort Defense Division, the Montana Association of Counties, or the Montana Municipal Insurance Authority.

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INTRODUCTION

Background

Risk management is a simple process that should be used extensively in any business environment. According to *The American Heritage Dictionary,* risk is defined as "the possibility of suffering harm or loss; a factor, element, or course involving uncertain danger; hazard; the danger or probability of loss to an insurer." The same source defines management as "the act, manner, or practice of managing, supervising, or controlling," Incorporating these general definitions, the term "risk management" can be defined as-the process of identifying risks, analyzing the appropriate methods for handling the risks, employing a curse of action to manage such exposures or risks. And monitoring the results of your activities.

Loss control is a process used in conjunction with risk management. *The American Heritage Dictionary* defines loss as "the act or an instance of losing; the harm of suffering caused by losing; the amount of a claim on an insurer by an insured." The Dictionary defines control as "authority or abiiity to regulate; a restraining act or influence." Incorporating these general definitions loss control can be defined as "a manner to regulated or restrain a loss."

What is a tort? A tort is a private or civil wrong or injury; a wrong independent of contract. With this simple sentence, a major field of law is opened. It goes by such names as tort law, negligence, P.I., or personal injury. Books have been written, volumes of books, based on tort law Law students are taught tort law, the equivalent of one year of instruction. Attorneys specialize in tort law. Regularly the papers are filled with personal injury awards approaching or exceeding a million dollars.

The concepts of risk management and loss control must be applied to our roadway systems to limit our tort liability. Certainly there are risks involved in the operation of a motor vehicle on the streets and roadways of this state and nation. Every year, almost 50,000 people are killed in automobile accidents, and over 1 million are injured. Approximately one out of every seven registered vehicles is involved in an accident every year!

In 1993, a total of almost 19,000 accidents were reported in Montana, which claimed almost 200 lives and results in over 9,000 injuries. The existing public roadway system in Montana has almost 80,000 roadway miles. Obviously, the numbers of accidents, deaths, and injuries can be related to the size of the roadway system.

Who is responsible for these accidents, deaths, and injuries? In almost every incident, drivers of the involved automobiles have to take total responsibility for accidents. Occasionally, drivers of other vehicles, pedestrians, animals, objects in the roadway, etc., can be held partially or totally responsible for an accident. On some occasions negligent actions on the part of a public entity, through its employees or contractors, may bear some degree of responsibility for an accident. Individuals, or the families of individuals, injured or killed in traffic accidents in which they were innocent (or in which they *claimed* to be innocent) of any wrongdoing or negligence, often file a claim/lawsuit to collect "damages" against the "guilty" party(ies). Most often, the "guilty" party

is the driver who was cited by the investigating police officer for some traffic violation (such as speeding, failure to yield right-of-way, failure to maintain control of his/her vehicle, driving under the influence of alcohol or drugs, etc.). The individual filing the lawsuit (the plaintiff) usually files against the "guilty" party (the defendant). The defendant will usually refer the matter to their insurance company. If the defendant is not insured, or if there is some question as to whether the defendant party will be found guilty by the court, the plaintiff may look to involve a party with a lot of money, (a "deep pocket"). Oftentimes this "deep pocket" is the public entity responsible for designing, building, or maintaining the roadway on which the accident occurred.

There is no question that, on occasion, a public entity has been guilty of negligence because of inappropriate actions or lack of action. An individual who suffers injury or has property damage, as well as the family of an individual who is killed in an accident, as a result of the negligent acts of a public entity, certainly has the right to sue to collect for their loss. However, oftentimes the public entity is brought into a lawsuit to defend itself against either wrongful, or highly questionable, accusations by the plaintiff. If the public entity fails to properly defend itself, there is great potential for the defendant to pay a court-ordered award from a few to over a million dollars. Sometimes the public entity is convinced that it's actions or inaction were appropriate. Jury verdicts are not necessarily based on the absolute truth, but on how the jury *perceives* the truth, as revealed during the trial.

A public entity has significant exposure to risk (financial loss) due to its responsibility (liability) for operation and maintenance of its roadway system. A public entity can be sued for anything, by anybody, at anytime. It must be prepared to defend against both viable and false accusations.

In order to reduce the risk of lawsuits, and the financial losses associated with claims and lawsuits, public entities should practice appropriate risk management and loss control techniques. This workshop has been developed to assist public entities to better understanding these techniques, in an effort to reduce roadway tort liability.

The purpose of this workshop is to acquaint roadway engineers, technicians, supervisors and public officials of their legal responsibilities, and to present guidelines for the protection of agencies, and individuals, in the area of tort claims. The course material is not intended to be a legal document, nor do the authors attempt to interpret the law or offer legal advice.

HIGHWAY TORT LIABILITY

Liability-Responsibility

Liability and responsibility are essentially synonymous. When an individual or and organization is **liable** for some activity, they are obligated **by law** to be responsible for that activity. If the responsible party fails to perform, or improperly performs that activity, and the failure or improper performance results in property damage, injury, or death to another party, the responsible party may face legal action initiated by the "wronged" party.

The U.S. Constitution reserves specific powers to the states, including all aspects of public safety, health, and welfare. Consequently, the State of Montana and its local communities (which have been delegated authority by the State) are able to construct and maintain streets and highways, and regulate motor vehicle movement on those roadways by motor vehicle codes and ordinances. Hence, public entities are given responsibility for street and road systems within each entity's jurisdiction, and they are may be **liable** for any improper actions that they take while designing, operating, and maintaining their streets and roads.

History of Sovereign Immunity

The laws that govern us today can be categorized simply as written and unwritten laws. The written laws are statutory laws passed by the legislature. However, predating these written laws, and acting with as much force, are the common laws. These laws have not been passed by a legislative body, but are a body of law that has evolved by society through the mutual relationships of people.

Scholars may argue that in a democratic society where, as in the United States, there is a separation of powers, the making of the laws should be left to the elected officials, and the judiciary should just administer these laws. Yet, we still have a form of judge-made law. It is interesting to note that when an interpretation of a statute is required, oftentimes the court will use common law doctrines to define the portions of the statute so requiring it.

Common law is viewed in court by a doctrine known as "Stare Decisis," which means "to abide by, or adhere to decided cases." Also known as precedence, this occurs when the court looks back into past cases to see how similar cases (fact or circumstance) were decided to determine if that past decision(s) could form a basis for a new decision. Put another way it is the policy of courts to stand by precedent and not to disturb settled point(s).

Out of common law comes the doctrine of **sovereign immunity**. The doctrine precludes governmental liability unless the government consents to be sued. How did this concept get started? One theory is that it started when William the Conqueror defeated the Anglo-Saxon king

in the Battle of Hastings in 1066 and proclaimed himself William, King of England. He brought with him a peculiar institution called feudalism. He created the common law courts, he said, for the people. One thing he would not allow was for the king to be sued. He argued that, since he ruled by Divine right, his power was Divine, and with this Divine power "he could do no wrong". From this belief came sovereign immunity: the King can do no wrong and, finally, the Government can do no wrong.

Many students of the law can't understand how the United States Courts could permit a doctrine such as this to be adopted. Here was a country that was formed because people were tired of being oppressed by the King. Yet, they did adopt sovereign immunity. It has a two-pronged doctrine: (1) You could not sue the government unless the government gave you permission to do so, and (2) even if you could sue the government, the government was not responsible for the acts of its employees.

Immunities are the freedom from all tort liability as a favored defendant. Historically there have been three classes of favored defendants:

- Family (all entities are one)
- Charitable (because of the good done)
- Governmental (can do no wrong)

While this workshop is concerned only with the latter, it is interesting to note inroads are being made in all three of these immunities. It seems unfair that an injured plaintiff should suffer the entire consequence of a loss just because he was injured by the acts of a governmental agent. The courts themselves began to recognize this inequity: in fact, it was the court system that first began to nibble away at this harsh doctrine.

While some courts have completely done away with sovereign immunity, many have modified it to the extent that breaches of duty owed to the public, by a public entity, are permitted to go to trial. At the state level it is often held that public authorities are immune from negligence arising in the performance of a governmental function. But the cases do not state that the converse is true--that state authorities may be held liable for negligence in the performance of proprietary functions--and few cases apply the governmental-proprietary immunity test to state authorities.

Federal and State Immunity

In the federal sector, there are various statues which might directly or indirectly bear upon highway "safety". Because the federal government does not generally engage in the design or construction of highways, a prime question always is, whether the federal government's broad supervisory or regulatory authority--in particular, its ultimate power and responsibility to provide or withhold funding support--could be used as a lever to compel increased attention to the roadside hazard problem? In sum, the intent of the Congress at the time of passage of the earliest Federal-aid highway legislation was to provide for an improved transportation network which would be built using the principles of sound fiscal management, with residual ownership, planning

and construction rights left to the State partner. The Federal partner in this scheme was left with supervision and inspection rights for the purpose of insuring that the Federal investment was neither irresponsibly wasted, nor invested without an adequate national return. The important question here is, how did the courts interpret these historical facts when presented with the question of Federal liability?

The landmark case in this area, which is still good law, is the case of Mahler vs. U.S., which in essence said that the intention of the Congress in requiring the approval and inspection of federally aided highway construction by the Federal Government was not to make sure that a member of the traveling public would not be injured because of negligence in carrying out such provisions, but to make sure that Federal funds were effectively employed and not wasted. This duty of inspection did not create any duties for the Federal Government which would extend to the injured party in this case, and the Federal Government would accordingly not be liable. Further, as to the question of liability for participating in formulating design plans and approving such, the Federal government would be protected from liability by the discretionary function exception to the Federal Tort Claims Act.(1)

It is interesting to note where a state program is approved and the program ultimately proves to be inadequate or ineffective in affording the level of expected result, or the state is otherwise negligent in executing the program, it is unlikely that the Federal Government would be a joint tortfeasor. Thus far cases have uniformly held that federal approval of a state's plan, design, or program, that is negligently conceived, is non-conforming to federal standards, or is otherwise dangerous, does not afford a claimant a basis for negligence action against the involved federal agency.

Montana Tort Claims Act

In 1972, the Montana legislature passed the Tort Claims Act which surrendered sovereign immunity for the State and all governmental entities. This act, found in Title 2, Chapter 9, Part 1 of the Montana Codes Annotated (MCA), states the following:

> "**2-9-102. Governmental entities liable for torts as specifically provided by legislature.** Every governmental entity is subject to liability for its torts and those of its employees acting within the scope of their employment or duties whether arising out of a governmental or proprietary function except as specifically provided by the legislature under Article II, Section 18, of The Constitution of the State of Montana."

In 1974, the Montana Legislature established limits of tort liability at $300,000 per claim and $1,000,000 per occurrence. This was amended in 1983 to $300,000 per claim and $300,000 per occurrence. In 1986, the current limits on tort liability were set as follows:

> "**2-9-108. Limitation on governmental liability for damages in tort.** (1) Neither the state, a county, municipality, taxing district, nor any other political subdivision of the state is liable in tort action for damages suffered as a result of an act or omission of an officer,

agent, or employee of that entity in excess of $750,000 for each claim and $1.5 million for each occurrence. (2) No insurer is liable for excess damages unless such insurer specifically agrees by written endorsement to provide coverage to the governmental agency involved in amounts in excess of a limitation stated in this section, in which case the insurer may not claim the benefits of the limitation specifically waived."

The state of Montana has retained specified immunities as exceptions to the Tort Claims Act. These are outlined in MCA sections 2-9-111 through 2-9-114, and include the following titles:

2-9-111. Immunity from suit for legislative acts and omissions;
2-9-112. Immunity from suit for judicial acts and omissions;
2-9-113. Immunity from suit for certain gubernatorial actions;
2-9-114. Immunity from suit for certain actions by local elected executives.

Part 2 of MCA Title 2, Chapter 9 authorizes the Department of Administration, State of Montana, to set up and administer a comprehensive insurance plan. This plan includes obtaining commercial policies and providing self-insurance programs for the state. The department is also responsible for adjusting claims and defending lawsuits. The act also allows the Department to accumulate and administer a fund, which is statutorily appropriated as provided in MCA section 2-9-202, for the payment of claims. These responsibilities have been assigned to the State Risk Management and Tort Defense Division.

Tort Liability Defense funds for other governmental entities (political subdivisions) in Montana are addressed in sections 2-9-211 and 2-9-212, MCA. It is these sections of the Code that authorize creation and operation of programs such as those operated by the MMIA and MACo.

The basis for many roadway-related tort cases is negligent behavior by one or more public employees. It is possible that a public employee could be sued directly by the plaintiff, or made a part of the suit as a codefendant with the public entity. However, plaintiffs generally prefer to bring suit against the public entity. Whether the public entity is self-insured or has purchased liability insurance, it is generally considered to have "deep pockets" and can afford to pay the desired large financial settlement or awards.

Part 3 of MCA Title 2, Chapter 9 encompasses provisions for the immunization, defense, and indemnification of public officers and employees enjoined in tort liability lawsuits and sued personally for their employment actions. Section 2-9-305, MCA, in part states:

"**2-9-305. Governmental entity to be joined as defendant--immunization, defense, and indemnification of employees...** (2) In any non-criminal action brought against any employee of a state, county, city, town, or other governmental entity for a negligent act, error, or omission, including alleged violations of civil rights pursuant to 42 U.S.C. 1983, or other actionable conduct of the employee committed while acting within the course and scope of the employee's office or employment, the governmental entity employer, except as provided in subsection (6) shall defend the action on behalf of the employee and indemnify the employee.

The employer is generally held responsible for the tortious actions of it's employees when those actions are committed within the course and scope of their employment. Obliviously, if a public employee is sued for involvement in a fight while "off duty," his employer would not be held liable for the employee's actions and would not defend the employee in court. On the other hand if the employee is involved in a traffic accident while performing his job, the public entity is liable for his actions. If the employee is sued individually and no suit is filed against the public entity, the public entity generally provides legal defense for the employee. This individual protection is provided by the Montana Risk Management and Tort Defense Division for state employees. Similar protection is afforded most other public employees by either their staff legal counsel or by counsel provided by insurance companies.

However, protection is not afforded under respondeat superior. The doctrine of **Respondeat Superior** is concerned with the personal liability of public entities (as employers) and of individual superiors for the tortious acts committed by their employees. In general, courts have held that the individual supervisor cannot be held liable for the tortious acts of his subordinates. As usual, there are exceptions to this general ruling. If the supervisor knows that his subordinate is intoxicated and allows him to drive a publicly owned vehicle and attempt to perform his job, the supervisor may face personal liability for any injuries or damages resulting from his subordinate's actions.

Issues of Negligence

A liability suit resulting from a roadway traffic accident is founded in a particular area of law called tort law. As mentioned previously, a tort is a "private or civil wrong that results in injury or loss." Hence, lawsuits filed as a result of a traffic accident are usually referred to as tort cases.

The most common tort case involves negligence. Three words, used throughout this notebook, should be defined at this point. Although all three words are relatively simple and virtually anyone can provide their own definition for each, the courts continually have to determine their relevancy to individual cases.

Negligence - Failure to exercise the care that a prudent person usually exercises, or carelessness shown in neglect.

Prudent - Able to govern and discipline oneself by the use of reason, or exercising caution as to danger or risk.

Reasonable - Not extreme or excessive; rational; possessing sound judgment.

Public agencies have a duty to operate and maintain roadways in a "reasonably safe" condition for users. This duty involves inspection activities, anticipation of roadway defects, and conformance with generally accepted engineering standards and practices. If the public entity fails to provide a "reasonably safe" condition and injury or loss results the public agency may be deemed liable.

The definitions given above should not be considered all inclusive. he difficulties presented to judges and juries are not in defining these words, but applying their definitions to the actions of

the parties involved in a lawsuit. What may be considered as reasonable and prudent to one individual may not seem reasonable and prudent to another.

The two parties that are involved in a lawsuit are referred to as the **plaintiff** and the **defendant**. The **plaintiff** is the accuser and the individual or party that claims to have suffered a wrongdoing. The **defendant** is the accused wrong doer and must "defend" her/himself against the plaintiff's accusations. Either the plaintiff or the defendant can be one individual, a group of individuals, a private organization, a public entity, or some combination thereof.

It should be obvious that negligence is the key to tort liability. To better understand the position of the public official and the government body in tort liability, let's take a look at the issues in a basic negligence case. To win a judgement the plaintiff must prove that:

(1) The defendant had a duty to towards the plaintiff;
(2) The defendant breached that duty;
(3) The breach committed by the defendant was the proximate (legal) cause of the plaintiff's damage or injury; and,
(4) The plaintiff incurred damages as a result of the breach of duty.

As an example, assume that a stop sign installed at an intersection had essentially deteriorated after several years and provided no reflectivity. Additionally, bushes had grown up to and around the sign and blocked motorists' view of it. A motorist, unfamiliar with the intersection, drives through the stop sign controlled intersection at night because he cannot see it. A right-angle accident occurs and their are injuries. A claim is filed against the public agency responsible for the maintenance of that sign. (The plaintiff may claim *millions* of dollars in damages because the public entity did not spend a hundred dollars in maintenance!) The courts could find:

- **The defendant had duty to the injured**. The public entity has the responsibility (and liability) to maintain their roadway system in a "reasonably safe" manner. Maintenance of signs, signals, and markings to provide for proper warning and traffic control is important to provide "reasonably safe" conditions.

- **There was a breach of that duty**. Failure to replace the worn-out stop sign or trim the bushes may be viewed as negligent behavior.

- **The breach of duty was the *PROXIMATE CAUSE* of the injury**. Generally, there are two causes of an accident. The **actual** cause relates to the specific action resulting in the accident. In the example, the actual cause was the motorist failing to stop and yield the right-of-way to another vehicle. The **proximate** cause is the legal cause of the accident. In the example, the proximate cause was the fact that the stop sign could not be seen by the motorist.

- **The plaintiff must have suffered a loss**. Suits brought against a public entity, based on the Montana Tort Claim Act, must involve accident-related damage or loss. injury or death. The purpose of the claim is to obtain an award that will put

- the injured party back into the position that they were in prior to the accident or to reimburse them for financial losses suffered due to the accident.

Comparative/Contributory Negligence

In almost every case, a traffic accident occurs due to the negligent actions of one or more drivers. Occasionally, an accident is the result of negligence by a public entity, a road contractor, or some other individual who was not directly involved in the accident. On rare occasions, as in the cases of animal-related accidents or "Acts of God," no negligence may be involved. In some instances negligent behavior by more than one party to a lawsuit may be determined. It is possible that both the plaintiff and the defendant were guilty of contributing to the accident occurrence.

Some states follow the doctrine of **contributory negligence**, a plaintiff who was injured in a traffic accident but was found to have contributed to his own injury, even if the amount of contribution was as little as 1%, could not collect damages from the defendant. Montana follows the doctrine of **comparative negligence**, in which the relative negligence of the parties involved are weighed. In Montana plaintiffs must be totally innocent, or up to 50% negligent, in order to collect damages from the defendant. If the plaintiff is found to be more than 50% negligent, he is prohibited from collecting any award.

Actual/Constructive Notice

In addition to the four issues previous addressed, which must be proved by the plaintiff in a negligence complaint, there is another important issue:

* Did the defendant have any knowledge, **actual** or **constructive**, of the condition or defect?

In order for the public entity to have knowledge of the roadway defect, it must have **notice** of the defect. The question that must be answered is, what constitutes notice? **Actual notice** is simple to understand using an example. A citizen calls a city traffic engineering department and reports that a traffic signal is malfunctioning at an intersection. The city is thereby given actual and specific notice of a defect. **Constructive notice** does not require specific notice of the defect. If a defect has existed for an *unreasonable period of time, or if the roadway has a history of problems, the public entity should have known of the defect and taken proper action.* Hence, the public entity has **constructive notice** of the defect. Specific notice is not required when the defect has been caused by the public entity's own act. If the public entity creates the defect though improper construction, maintenance, or repair, constructive notice is assumed.

Occasionally, a public entity has to admit that a roadway defect did in fact cause an accident but that it should not be held liable for the accident related injuries and/or damages because it was not aware of the defect. Hence, the public entity did not have knowledge of the defective condition.

With notice of defect, whether actual or constructive, the public entity has a duty to either correct the defect, protect the public from the defect, or warn the public of the defect. If proper warning devices are utilized, they will be tolerated only for a reasonable period of time. A warning sign with the message "Rough Road" should not remain in place for an unreasonable period of time, the damage should be repaired.

Conclusions

Law is not as specific as simple arithmetic. Very few issues are either "black or white". There is much "gray" that requires opinions, arguments, and judgments. The courts have attempted to be reasonable, in making decisions so as not to be unusually unfair to either the plaintiff or the defendant, although individual case decisions may be viewed as unfair by the losing party. There are some general guidelines, summarized below, that have proven helpful in making decisions relative to responsibility and negligence:

(1) The state or public entity is not an insurer of its roads or a guarantor of absolute safety;

(2) motorists have the right to presume, and act upon the presumption, that the roadway is safe for usual and ordinary traffic operations during both daytime and nighttime;

(3) the public expects the roadway to be reasonably safe for travel under normal operational conditions, according to acceptable engineering standards and practices;

(4) in maintaining a roadway for reasonable safe operational conditions, there is a wide latitude for exercising discretionary decisions; however, continual supervision and inspection of the roadway is extremely important and necessary for proper maintenance operations;

(5) courts do recognize that certain factors affect the liability to maintain roadways in reasonably safe conditions, including the weather, the terrain, and the construction materials;

(6) the mere presence of a roadway defect does not alone constitute the basis for recovery, negligence by the defendant has to be proven; and,

(7) for roadway-accident related cases, negligent behavior can usually be thought of as having knowledge of a dangerous or defective condition on a roadway and failing to safeguard the public from the condition.

It is not the intent of this course to instruct you in how to win a case brought against you. That is the duty of your attorney. On the other hand, the public officials and employees need to be able to understand those situations in which the tort claims may be real or justified and where they are not. For this reason, we will look at the defense aspects of the tort liability case. The best defense against tort liability is not necessarily an airtight case of defense. It is, in fact, the avoidance of negligence by exercising sound judgment and due care--a *prevent* defense.

The message of this section is that there are certain duties to be met. You have a choice: you can victimize your entity through the ostrich syndrome (bury you head in the sand and hope the problem will go away), or you can identify your problem areas and begin a remedial action program which fits your budgetary and manpower constraints. Nothing short of a perfect system will prevent legal suits--this being the case, you should opt for the most defensible posture.

ELEMENTS OF RISK MANAGEMENT

Introduction

The methodology for reducing the risk of roadway tort lawsuits revolves around the a central theme: *The liability risk exists and **must** be managed.* Risk is an act, activity, or asset of an agency which presents a potential for loss. Risk is an element which exists with every operation of a every public agency. Risk management is the ongoing *process* of planning, organizing and controlling resources and activities in order to minimize the adverse effects of any loss.

Risk Management

Risk management deals with: (1) the systematic identification of an agency's exposures to the risk of loss, and (2) making decisions on the best methods for handling these exposures, to minimize losses. Because it is highly unlikely that an agency's exposure could ever be completely negated, it is necessary to employ **risk management** techniques to address the financial consequences of these exposures.

As previously noted, Article II, Section 18 of the Montana Constitution was modified to abolish the government's immunity from lawsuit. Legislation enacted subsequent to the 1972 Constitutional Convention provided for the establishment of various insuring options for the State and its political subdivisions. The Risk Management and Tort Defense Division defends the State, and its employees, against tort actions and provides risk management and claims administration services to State participants. The Montana Municipal Insurance Authority (MMIA) provides the same to incorporated cities and towns, and the Montana Association of Counties (MACo) serves the counties.

The mission of these organizations is to provide cost effective, comprehensive insurance coverage and risk management services, and to protect and defend their member entities against covered losses stemming from casualty and/or property claims. Their philosophy is to investigate, identify and resolve, as quickly as possible, claims and legal cases brought against their respective agencies. They also assist agencies in effectively managing the loss once it occurs. The benefits of risk management and loss control are many! An effective program of risk management will assure that damages resulting from tort or other liability or property loss are minimized and that human resources are protected.

Risk Financing

Risk financing is the process of establishing a means to pay for losses. Risk financing can be the setting aside funds to cover anticipated losses or the purchasing of insurance to cover losses.

These monies are used to adjust claims, pay settlements/ judgments, and defend litigated matters.

Along with consideration of risk financing methodology comes a decision to either *retain* or *transfer* the financial exposure of the risk. If the risk is retained, the ultimate cost to resolution is born by the agency. If a risk is transferred the financial responsibility for a loss is upon another party. The purchasing of commercial insurance is a common form of risk transfer, since the financial risk is transferred to the insurer.

Another form of risk transfer is the use of *"Indemnification and Hold Harmless Agreements"*. In such agreements it is specified that one organization agrees to indemnify and hold another harmless from any liability with respect to certain actions. he credibility of the individual or organization assuming the risk is essential when transferring risk. In any for of risk transfer, if the transferee does not have the ability to fund the losses the transfer is essentially useless.

Risk retention and risk transfer can be used to varying degrees. An entity may have a sizeable deductible (retention) with insurance coverage above the deductible (transfer). Pooled insurance programs generally employ both risk retention and risk transfer in varying degrees. Governmental agencies are sometimes forced to employ risk retention for exposures where insurance coverage is unavailable and there is no viable option to transfer coverage of the exposure, (ie. pollution)..

Loss Control

Loss control is another risk management treatment. **Loss control** is the process of minimizing, to the least possible cost, the risk of losses to which n agency is exposed. There are two segments to loss control: **loss prevention** and **loss reduction.** Loss prevention deals with lowering the *frequency* of loss. whereas loss reduction is concerned with lowering the *severity* of loss.

On one extreme, loss control could be interpreted to mean completely *avoiding* the loss in the first place. Unfortunately, this is not very feasible in the context of roadway operations, or most other governmental functions. Therefore, the focus should be to minimize the frequency of loss and to manage the loss one it occurs. Every entity must train its employees to properly investigate incidents, manage the activities surrounding the incident, and take remedial action to prevent a similar incident from occurring. It is unrealistic to assume losses are not going to occur.

Elements of Risk Management Program

A successful risk management program involves the implementation of strategies for financing the risk and controlling the loss. The ultimate goal of any risk management program should be to minimize the exposures as much as feasible and obtain the lowest possible loss costs. There are a number of elements that go into a good risk management program. From the standpoint of achieving these goals, several *desirable elements* should be considered when developing a risk management program.

- Qualified and capable staff
- Adherence to agency standards/policies
- Effective documentation/record keeping
- Accident investigation procedures
- Accident reduction methodology
- Roadway improvement programming

Qualified and Capable Staff

A critical consideration in any public agency's risk management program is the provision of **qualified** and **capable** personnel to perform agency duties in a responsible manner. It is generally held that public agency employees owe a duty to the public to provide a reasonable "standard of care". If such care is not exercised, the agency and/or responsible employees may be held liable for such conduct. Obviously, if an agency is operating with unqualified, incompetent personnel, it will be more difficult to provide a reasonable standard of care. The standard of care which you will be held accountable for can be defined as:

> *The nature and level of expertise which is required under law for individuals who, by virtue of training, experience, and reasonable public expectations, hold themselves out to have special skill which are greater than those held by the average person and upon which the public has a right to rely.*

When speaking of **qualified** and **capable** employees, it is generally accepted that proper -training is a prerequisite. Today, much of the litigation brought against public agencies argues that the agency failed to properly train its employees. In the fast moving, technological society of today, every employee must be trained to properly perform the tasks required of their job. Allocation of funding for training is an essential element of good risk management.

Adherence to Agency Standards/Policies

As a minimum, employees are expected to follow guidelines and procedures that have been adopted by the agency. Such documents generally contain information ranging from design criteria to operational policies and procedures. Strict adherence to such guidelines, standards, and policies will not be an absolutely guaranteed against tort claims. In a court of law, however, testimony to the effect that rules and guidelines were being followed will help prove "reasonableness", since a reasonable person would follow such rules.

The applicable standards for roadway operations are generally more broad than those contained in internal documents of an agency. Every agency must stay abreast of the generally accepted standards used in similar operations or activities. Adherence to design, maintenance and signage standards is essential to the defense of claims and lawsuits.

As previously mentioned, such documents also may serve a useful purpose in court, if it can be shown that the agency was adhering to them. On the other hand, if written policies and

procedures are not followed, it will be relatively easy for a plaintiff's attorney to establish that a reasonable standard of care was not exercised. A periodic review of all relevant materials and/or manuals adopted by the agency should be undertaken.

Effective Documentation and Record keeping

A key function in minimizing agency liability is a sound documentation and record keeping system. A *document* may take one or more of the following forms: correspondence, notes, data sheets, computations, maps, plans, and diaries. *Records*, on the other hand, are written accounts, generally prepared under authority and retained as long-term or permanent evidence as to what was found or performed. In terms of claims and tort litigation, the presentation of both documents and records is essential for a proper defense and resolution of the matter.

Recording and/or documenting agency actions is especially useful in the following situations:

(1) Justification for discretionary decisions;
(2) Complaints and Responses; and
(3) Maintenance/Repair activities.

A concern is often raised that poor documentation procedures will be obtained by the plaintiff's attorneys under the rules of discovery and used against the agency. Therefore, little or no documentation is better! The argument against such a concern is, if an agency is acting negligently or irresponsibly it will likely lose in court whether or not documentation is available. However, if the agency is acting responsibly good documentation will be required to prove it in court.

The motivation for documentation of complaints is the concept of "notice of defect." Complaints of defects can come from your agencies or the general public. Regardless of the source, it is important that a program be available so that the agency's responds to a complaint as soon as practicable.

One reason why agencies may hesitate to document defect notices is the concern that the plaintiff's attorney may obtain such a document and use it against the agency, particularly if the defect has not been corrected. As is the case with documentation, or lack thereof, it is essential that you properly respond to a notice of a defect. The main point here is that an effective documentation program that promptly relays "notices of defects" to maintenance crews will provide a defense and minimize the number of claims brought against an agency.

Though the documentation of defect notices is important, caution should be exercised in the written description of such complaints. The description should be as objective as possible. Words such as "hazardous" or "unsafe" should be used sparingly or avoided. Only **facts** should be recorded, **not opinions**. The documentation should be prepared in such a way that its authenticity and authorship may be easily demonstrated.

The importance of maintenance records cannot be over-emphasized. If an agency becomes involved in litigation, these records will provide an invaluable to in helping to prove what was done and when. The elements necessary for maintenance records include, time, location,

individuals involved, action taken (including signage and traffic control measures), materials used, and condition after maintenance.

Identification of Risk Exposure

The success of a risk management program hinges on the agency's ability to correctly *identify exposures to risk,* so that appropriate methods may be implemented to minimize losses. An agency's operational data collection program is of considerable importance. Besides enabling the agency to correctly identify risk exposure, data collection procedures provide valuable documentation for defense of possible tort cases.

An effective data collection program involves data collection for all activities in which the agency is directly involved. This will ensure adequate documentation of the agency's activities which, in turn, will enhance the agency's ability to correctly identify existing and/or probable future risk exposure. The following is a list of data collection activities with which most agencies are typically involved:

- Roadway inventory
- Roadway volumes (ADT) count
- Photologging/videotaping (especially long-term construction sites)
- Signal inventory and maintenance programs
- Sign inventory and maintenance program
- Pavement marking inventory and maintenance program
- Railroad crossing inventory and inspection program

Roadway Inventory

An agency's roadway inventory is basically an exhaustive list of all roadway segments and/or routes in its jurisdiction. This list generally includes technical information concerning linear distances between intersections as well as more descriptive information, such as cross-section data and access information.

Roadway Volume (ADT) Counts

Traffic volumes are generally collected for most routes and segments within the agency's jurisdiction and input into the roadway file. These volumes are input as average annual daily traffic (ADT) volumes, which are obtained by projecting short-term counts and adjusting them with factors that account for hourly and seasonal variations.

From the standpoint of risk management, ADT counts are useful in determining vehicle exposure and accident rates at chosen study points. This facilitates the identification of high accident locations so that these locations may be examined and improvements proposed, if warranted. Additionally, these ADT counts serve as documentation where accident rates are used to prioritize improvement projects.

Photologging/Videotaping

Photologging and videotaping are two methods of obtaining roadway inventories that are becoming increasingly popular. These documentation methods are advantageous for two reasons; (1) a large amount of information may be obtained quickly and economically, and (2) pictorial information is more easily understood by lay persons on a jury than are engineering documents.

While use of this technology is relatively expensive, the effectiveness of this tool cannot be overstated. This form of documentation requires timeliness to be useful. If the roadway has changed appreciably since the last photologging activity, the documentation will be of little use or relevance. An effective program would provide a process to re-photograph roadways at some appropriate time interval, so that the photographic documentation does not become outdated.

Inventory of Traffic Control Devices

Highway Safety Program Standard 13, Traffic Engineering Services, requires each state, in cooperation with its political subdivisions, to have a traffic control device plan that includes:

(1) An inventory of all traffic control devices;
(2) a periodic review of existing traffic control devices, including a system for upgrading substandard devices to conform to standards, issued or endorsed by the Federal Highway Administrator; and,
(3) a maintenance schedule adequate to ensure proper operation and timely repair of all control devices.

An agency's inventory program should contain provisions to identify and locate all traffic control devices operated by the agency. As a minimum, this would include signs, signals, and markings. Additionally, "street furniture" such as parking meters, fire hydrants, benches, and other items used in the outdoor public environment might be included in the inventory program.

An inventory of an agency's traffic control devices will benefit the agency in a number of ways. First, the system can serve as documentation in legal proceedings involving the agency's responsibility for signal, sign and/or marking placement and location, etc. Additionally, in analyzing high accident locations, the inventory system will make it possible to construct collision diagrams reflecting the location and last known condition of all traffic control devices.

Railroad Crossing Inventory and Inspection Program

Railroad crossings are locations where railroad lines intersect with a street or highway. Railroad crossings warrant major consideration because they present potential for severe accidents. An adequate inventory system that keeps the jurisdiction aware of current railroad crossing conditions is one way to minimize loss potential. This inventory should include copies of all contracts with railway, and other agencies.

Additionally, federal highway legislation requires that each state have a systematic procedure for

determining individual project improvement priorities. This implies that some type of inventory system is necessary so that a priority ranking process can be applied to all grade crossings. The National Railroad-Highway Grade Crossing Inventory is a computer file containing information on all public grade crossings, grade separations, private crossings, and pedestrian crossings within each state. This file is available to all states and may be obtained from Montana Department of Highways.

Accident Investigation Procedures

It is a simple matter to file a lawsuit, and no doubt, it appears to some that litigation has become a popular national pastime. Successfully in defending a lawsuit is another matter, particularly when the government or one of its employees is the defendant. To help lessen the chance of losing in a lawsuit, it is important that most incidents and every accident be investigated.

Montana laws allow for a three year statute of limitations for the filing of most tort claims. In other words, the plaintiff has three years after the occurrence of his accident to bring suit. With the passage of time the accident site may not look exactly like it did at the time of the accident. Given the seasonal changes of Montana, or if an accident takes place in a construction or maintenance zone, it can be extremely difficult to recreate an accident site. In these cases immediate investigation is absolutely critical.

The investigation of "high-exposure" accidents, those accidents which have a high probability of a lawsuit, is an important risk management tool which will minimize the problems associated with the defense of claim regarding the accident. "What is a high-exposure accident?". An accident that results in death or major injuries has a much higher potential for lawsuit activity than does one involving only minor injuries or property damage. If multiple deaths or multiple major injuries are involved (e.g., a bus accident or several automobiles in a multiple vehicle collision), then the potential for lawsuit activity increases. Each public entity will have to decide which accidents warrant immediate investigation. Generally, all fatal accidents should be considered as "high-exposure" accidents. Injury accidents will have to be dealt with individually.

Other "high-exposure" accidents are identified by the conditions of the accident. If much publicity is provided, the potential of lawsuit activity will be increased. If a specific claim of a roadway deficiency is made by a witness, the investigating officer, or by an individual involved in the accident, the potential of lawsuit activity will be increased.

Personnel involved in construction, maintenance, and utility operations have a high likelihood of eventually finding themselves at the scene of an accident, either when it occurs or shortly thereafter. These individuals must be informed of the appropriate actions to take in such circumstances. It is often difficult to respond rationally at the accident scene under the tensions of the moment. Training is essential in overcoming such difficulties. The employee is much better equipped to respond in an appropriate manner if the organization's policies have been presented to him and he has had the opportunity to learn procedures and priorities in a classroom environment.

Law enforcement officials have the basic responsibility for on-site supervision at an accident

scene. However, others may have to take action initially until law enforcement arrives. Medical personnel, when they arrive, should assume responsibility for injured persons, but not control of the site. Basically, the first person with some official status to arrive at the scene should take charge until the police arrive. It is important to channel all help and corrective actions through one person, otherwise, redundant requests for assistance may be made or key requests may be overlooked.

There are many reasons an agency may wish to conduct its own investigation of an accident. Police reports fulfill a different purpose and may be deficient with respect to information needed by a roadway agency. If it appears that a claim may be forthcoming, additional information may be needed for the preparation of an adequate defense. In some instances, such as work area traffic control, corrective action may be in order before the police report is filed. An engineering evaluation of the situation may be required. The accident may establish notice of a potential problem or defect. Investigation enables personnel to testify firsthand on findings.

Following an accident certain precautions should be taken by every agency. Policies should be followed and actions carefully documented. Discretion should be used before releasing any of the information collected. Employees should be aware of the damage that could result by improperly releasing any information. Representatives of your agency must be careful to only record the facts surrounding the incident. Statements of judgement (ie. this was a dangerous condition. I don't think the sign worked properly, etc.) should never be part of any investigation report.

The investigating law enforcement officer will develop a report of the accident commensurate with their legal requirements. The following items may or may not be recorded in the police report. Regardless, they are items with which police officers are not as familiar and for which independent observations are desirable:

(1) Pavement surface condition;
(2) Type and location of all pertinent traffic control devices;
(3) Type, size, condition, height, and lateral position of signs;
(4) Type and condition of pavement markings;
(5) Type and locations of traffic signal displays, controller type, settings, etc.;
(6) Description of pertinent roadway hardware and appurtenances;
(7) Grades, cross-slopes, drop-off, etc.;
(8) Dimensions of roadway, shoulders, median, etc.; and,
(9) Identification of agency personnel who witnessed the accident or who had firsthand knowledge of conditions at the site.

Documentation of the existence and location of traffic signals, signs, and pavement markings is most important. Absence or improperly installed traffic control devices are a primary target for plaintiff accusations. Dimensions to lateral (and vertical) clearances are also very important, particularly if the accident involved a fixed object adjacent to the roadway. Depths of shoulder drop off, widths of lanes, and side slopes may be important, depending on the type of accident. If the accident occurred at night, the type of illumination and the reflectivity of signs should be identified. If the accident occurred during wet conditions, weather records should be obtained.

Whenever possible photographs should be obtained of the accident site, damage to any facilities, and when it can conveniently be done, the vehicles involved. While some photographs may be made by investigating officers, they may not include information important to the agency. It is important that initial investigations and photographs be made without delay. As mention previously, prompt investigation is particularly important in construction zone or work area accidents, where conditions change frequently, or where unusual weather conditions existed at the time of the accident. Some suggestions for taking useful photographs are as follows:

- Take close-ups of features such as guardrail and traffic control devices to show type and condition; then take a more distant view to show location with respect to other features;
- Obtain close-up views of gouge marks, damage, etc.; and,
- Record pertinent information for all photographs--date, time, location, direction facing, photographer, etc., and number the photographs.

In addition to the field data and photographs previously described, you may want to include in the investigation file the following items, if available and pertinent:

(1) Legible copy of police accident reports;
(2) Legible copy of form used to report damages to public property;
(3) Set of roadway plan sheets;
(4) Name and address of contractor, contract number, dates of execution and final acceptance, and nature of insurance coverage provided by the contractor (i.e., whether the agency is named as an additional insured);
(5) References to standard specifications or provisions or change orders relating to the situation at the time of the accident;
(6) Maps or drawings of the scene of the accident, showing the location where the accident occurred and the path of travel of the vehicles involved, along with pertinent measurements, location, and description of all permanent and temporary traffic control devices;
(7) Statement from agency employees who may have witnessed the accident or who have knowledge of the situation concerning it;
(8) Names and contact information for any known witnesses;
(9) Newspaper articles about the accident; and,
(10) Copies of citizen's complaints about pertinent conditions at the site along with the agency's records of actions taken in response to these complaints.

All investigation reports should contain only factual data, not opinions or conclusions regarding the cause of the accident and liability of the agency. A detailed accident investigation checklist is given in Appendix A.

Under the Open Records Act, the plaintiff has access to all the manuals and publications of governmental agencies. These records are actively used by the plaintiff's attorneys in court action. Some attorneys' offices are quite extensively stocked with information of this nature. The Open Records Act has some limitations. Any request for information from files should be referred to

your agencies legal counsel, for study and recommendations, before furnishing anything. Requests should always be in writing. Never issue any file information on a verbal request.

In the event there is knowledge or suspicions of a claim or suit being prepared, or served, never comment or go on record to the plaintiff or their agents. Do not ever represent anything in the way of dangerous conditions, internal operations, general policy, etc. Never make an admission of liability, this determination is the job of the legal process. Avoid leading remarks such as "it will be taken care of", we will handle it, etc. This is true for all representatives of your agency. Too often one agency indites another (ie. A bus driver for the agency stating that the sanding crew should have already sanded this area). Always inform individuals, upon their inquiry, that they have a right to file a claim, should they desire to do so, and provide them with the proper way to file a claim with your agency.

HIGH RISK CONDITIONS AND TORT CASES

Introduction

A roadway-related tort claim is generally a traffic incident, resulting in the plaintiff accusing the defendant of negligence. Obviously, if the incident never occurred, the claim would likely be filed. Hence, if all traffic accidents could be eliminated, then highway-related tort claims would be almost non-existent. It is impossible of course, to eliminate all accidents; people are imperfect, and they will make mistakes that will cause accidents to happen.

There are some accidents that are more likely to result in tort claims. These "high-risk" accidents (or potential conditions for "high-risk" accidents) deserve special attention. Accidents resulting in fatalities or serious injuries are prime candidates for lawsuit activities. The probability for fatal or serious-injury accidents increases as vehicular speeds increase and where the potential for head-on or fixed object collisions increases. Although many people will indicate that they "knew someone would eventually get killed at that intersection," it is impossible to predict when or where a fatal or serious-injury accident will occur. There are, however, some roadway locations or conditions that are considered to have a greater potential for accidents.

Tort liability claims can evolve from almost any situation. The following is a discussion of conditions that may influence accident occurrences, and a discussion of applicable tort claims.

Construction/Maintenance Work Zones

Maintenance and construction sites (*work zones*) are high-risk areas of special concern. One of the primary concerns, in addition to the vehicular exposure hazard, is with the hazards pedestrians and construction workers are exposed to. Work zones are unique problem areas because they conflict with the driver's expectancy and do not follow design consistency. In light of this, it is usually held that authorities should provide proper safeguards or adequate warnings of work zone areas and that these warnings must be commensurate with the degree of danger. The "adequacy" of these warnings is the question that is generally raised in tort claims. Unfortunately, most cases discuss only what is *not* adequate, decisions on what is adequate warning are rarely addressed. Part VI of the *Manual on Uniform Traffic Control Devices* contains provisions for adequate warning in construction and maintenance zones which assist in alleviating the signage problem.

Accident experience in work zones is almost always higher in comparison to non-work zone areas. It is worth mentioning that different types of projects require different work zone layouts, and some types of work zones have greater potential for accidents than others. In addition, it is easier to "provide adequate warning" for some maintenance activities than for others. For example, the construction or rehabilitation of a bridge is a stationary activity in which there is

typically ample opportunity to warn motorists of any possible hazards. This is in contrast to shorter term activities, such as pot hole repairing and/or striping, where the "adequate warning" doctrine can be more difficult to implement. The MUTCD addresses these latter activities as either fast-moving or slow-moving (intermittent stop) activities. The key elements for both of these activities is sufficient warning and visibility. (14)

The MUTCD offers five fundamental principles to insure adequate application of traffic control techniques in work zone areas:

(1) Traffic safety in construction and maintenance zones should be an integral and high priority element of every project from planning through design and construction.
(2) Traffic movement should be inhibited as little as practical.
(3) Motorists should be guided in a clear and positive manner while approaching and traversing construction and maintenance work areas.
(4) The implemented traffic control elements should be inspected on a routine basis to ensure acceptable levels of operation.
(5) Constant attention should be given to the implemented traffic control elements to minimize (or negate) potential increases in hazards.

Adherence to these fundamental principles will not guarantee complete safety in the work zone. However, it does offer a methodology whereby hazards may be mitigated to a great extent.

The most common deficiency in managing traffic through work zones is improper signing at temporary work zones. Quite often, city or utility company work crews are required to block a portion of a street for a short period of time to perform maintenance activities. In many of these cases, advance warning signs are not placed properly, if placed at all. A common occurrence is the installation of a **RIGHT LANE CLOSED AHEAD** sign immediately adjacent to the front of the lane closure. All employees who perform maintenance and/or construction activities requiring the blocking or detouring of traffic should be informed of the proper methods for installing advance warning signs and barricades.

Case Illustration - Montague vs. City of Townsend

This is a lawsuit, which arose out of a claim filed against the City of Townsend, by a woman who fell into an open excavation hole located in the city's alley right of way. The excavation, in the city right of way, was a result of a sewer service line replacement project being done by a local contractor on behalf of a homeowner. The local contractor had replaced the sewer service line, and exposed the sewer main in the alley right of way late in the day. Given the late hour in which the sewer main was exposed, the contractor did not have time to make the tap and connect the service line. The contractor opted to leave the excavation open overnight and complete the project the following day. The contractor borrowed barricades from the City, and barricaded each end of the alley, leaving the excavation sight open. There were no flashers, candles, or lights utilized, and the barricades at either end of the alley were the only warnings of this excavation.

Sometime between the hour of 11:00 p.m. and 1:00 a.m., the plaintiff left a local bar, and was walking up the alley in question, to her vehicle. The plaintiff, who admittedly had consumed some alcoholic beverages that evening, indicated that she did see and in fact, walked around the barricade at one end of the alley, and proceeded up the alley to her vehicle. The plaintiff indicated that the alley was extremely dark and she did not see the excavation sign. While walking up the alley she just, "fell into this hole." The excavation hole was approximately nine feed deep. The plaintiff suffered a broken ankle as a result of this accident.

The contractor indicated that he left dirt spoil piles on the three sides of this excavation sight which adjoin the city alley. The plaintiff does not recall walking up and over the approximate three foot tall dirt spoil piles. The plaintiff subsequently filed suit against the City of Townsend, for failure to maintain their right of way, and the contractor for failure to properly barricade.

The property owner has settled with the plaintiff on behalf of the contractor. The suit against the city is currently being defended. The city claims no responsibility for this incident.

Case Illustration - Hutt, et al vs. State of Montana, et al

This survival and wrongful death case arose on June 16, 1990, when the defendants were working on road construction, near McGregor Lake, on U.S. Highway 2, West of Kalispell in Flathead County. The Hutts' were traveling west on Highway 2, when they came upon a closed lane of traffic and a line of vehicles stopped by a flag person. The Hutts' ran into the last vehicle in the line, without braking. Francis age 75, died within hours of the accident. Marie age 64, survived for 45 days.

The plaintiff alleged the defendants failed to properly place signs to control traffic. The defendants contended the warning signs and flaggers were in place and were sufficient. The defendant contended Ralph Hutt's inattentiveness and careless driving caused the accident.

On March 6, 1992 , a Montana jury returned a defense verdict for the State. The plaintiffs original demand was 1.4 million, the pre-trial settlement demand was $160,000, the defense offered zero. On April 10, 1992, the plaintiffs filed a motion for a new trial, which was denied on May 8.

Roadside Safety

Historically, roadside safety has focused on the run-off-road scenario and what was or was not the condition encountered once the vehicle left the "travelway". Tort liability issues associated with roadside safety have concentrated in three areas:

(1) Nature, location, and treatment of fixed objects within the clear zone;
(2) Non-traversable hazards, such as steep side slopes; and
(3) Maintenance of roadside areas such as shoulders and drainage ditches to prevent edge drop-offs and vegetation obviation.

Many fatal or serious-injury accidents are the result of vehicular impact with fixed objects. Development of breakaway signs and luminary supports, flexible roadside barriers, and attenuation devices (crash cushions) was stirred by the desire to reduce deaths and injuries associated with such accidents. Typical fixed objects adjacent to the roadway include utility poles, signal poles, trees, bridge headwalls, overpass support columns, culvert headwalls, and so forth.

Roadside objects can be treated in four ways:

(1) Remove the object;
(2) Relocate the object;
(3) Make the object "breakaway" on impact; or
(4) Protect vehicles from hitting the object.

Tort liability cases involving fixed object accidents usually include the claim that one of the four actions stated above should have been undertaken by the defendant. The decision concerning which action may be appropriate is site specific. It is difficult to say that certain objects should always be removed or relocated, or that crash cushions should always be installed at certain locations. These decisions are unique to each site and discretionary in nature.

There are two areas of consideration relative to fixed object accidents: traffic barrier design and installation, and the clear zone concept. Quite often, the plaintiff will allege that the installation of a guardrail would have prevented a fixed object accident. However, it must be understood that the installation of a guardrail (or barrier) is essentially the installation of one fixed object to protect a vehicle from hitting another fixed object (some barriers are flexible, but most are rigid). A guardrail (or barrier) should be installed only if it can reduce the potential severity of an accident with the fixed object that it is designed to "protect." In many cases, the presence of a guardrail will actually increase the possibility of a collision between the vehicle and guardrail, but decrease the severity of accidents because guardrail are designed to contain and redirect a vehicle.

The *clear zone concept* is also presented in many tort liability cases involving fixed object accidents. The concept is based on research studies whose results advocated clearance of roadside obstacles as a method of reducing accidents. Study results indicated that about 80% of all run-off-road accidents involved vehicles that never traveled beyond 30 feet from the edge of the roadway. Consequently, a clearance of 30 feet was established as the ideal clearance to enhance roadside safety.

On most rural roadways, the original 30-foot clear zone distance was excessive and could not be justified for engineering, environmental or economic reasons. The 1989 AASHTO Roadside Design Guide modified the earlier clear zone concept by introducing variable clear zone distances based on traffic volumes, speeds, and roadside geometry. The current AASHTO Policy on Geometric Design further establishes horizontal clearance to obstructions (clear zone) as 10 feet minimum for low-speed rural collectors and rural local roads.

Shoulders are those portions of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses. It is recognized that properly constructed and maintained shoulders can

contribute to safe driving. Sod shoulders require periodic light blading to prevent shoulder buildup and drop off and to provide a uniform slope sufficient to properly drain the roadway surface. Serious and habitual rutting of shoulders in critical areas should be corrected as soon as possible. Open base or gravel shoulders require maintenance similar to that of sod shoulders. Paved shoulders are subjected to distresses and deterioration similar to the traveled way and may require maintenance.

Edge drop-offs (or shoulder drop-offs) are oftentimes brought about by pavement overlay and resurfacing activities. Occasionally, the edge drop-offs result from erosional activity associated with highway drainage. When a given sector of highway is "blacktopped," a differential is introduced between the elevation of the main lanes and elevation of the shoulder area, creating potentially hazardous conditions for motorists leaving the main lane and entering the shoulder.

Roadside conditions, including slopes, drainage ditches, and vegetation are increasingly being litigated from the maintenance perspective. Vegetation is often alleged as contributing to drainage inefficiency and sight restrictions, and larger trees within required clear zones areas are cited as roadside hazards. Slopes and ditches should be preserved as near as practical to originally constructed or subsequently modified conditions. Vegetation is helpful to control erosion but, if excessive, may contibute to drainage inefficiency or sight restrictions. Good preventive maintenance practices can minimize the risk aspect of the roadside.

Case Illustration - Weiss vs. State of Montana

This case arose on October 4, 1986, when Jason Albert Weiss was killed after the vehicle in which he was a passenger struck the end section of a guardrail on U.S. Highway 93, two miles south of Polson, Montana. Another passenger was also killed. At the time of the accident, the driver's blood alcohol concentration was .17 and Weiss' blood alcohol concentration was .10.

The driver's insurance company previously settled the two fatality claims for policy limits of $100,000 ($50,000 each). Weiss was the only person to pursue a claim against the state. The claim was filed by Jason's mother, Abbie Weiss, individually and as personal representative to the estate of Jason. The plaintiff alleged that the Department of Transportation was negligent in the design, construction, and maintenance of the guardrail. The State argued that the design, construction and maintenance of the guardrail was reasonable and that the cause of the accident was the very drunk driver.
On September 16, 1992, a Montana jury returned a 10-2 verdict after deliberating one and one-half hours, finding no negligence on the part of the Department of Transportation in this wrongful death action. The plaintiff's final pre-trial demand was $85,000.00 and the jury request was for $300,000 to $500,000. The State offered no money.

Case Illustration - Detienne vs. City of Plentywood

At approximately 2:00 a.m. on July 9, 1995 the claimant, Larry Detienne was driving his motor vehicle south on a gravel road within the city limits. As he approached a railroad crossing, an arm

for a gate was sticking into the roadway. Mr. Detienne continued south not seeing the arm for the gate. The gate arm went through his front windshield, striking Mr. Detienne in the shoulder, and exiting out the rear driver's side door, stopping the car very rapidly.

The city has a softball field which is accessed by this road. A softball tournament was in progress this weekend. The local grain elevator installed the arms and the property the arms are located on belongs to the Burlington Northern Railroad. The City exercises no specific control over this particular road.

The city settled with Mr. Detienne. An investigation of the incident determined that the arms were in the city right-of-way with the city's permission. There was an activity on adjacent city property and the city had knowledge of the arms, their location and their usage.

Pavement Surface

High risk conditions associated with the roadway pavement surface, that generate tort liability claims, can be categorized in two areas: pavement defects or failures; or slippery road conditions

Pavement surface serviceability is affected by defects or failures, corrugations and shoving, wheel rutting, potholes, raveling, cracking, polishing, flushing, bleeding, and so on. The AASHTO Maintenance Manual clearly describes these conditions and their maintenance needs.

An agency's duty to correct these defects (or warn of them) is related to its duty to exercise reasonable diligence to keep highways and streets reasonably safe for travel. The duty of the agency to warn of a defect and correct the defect is obvious. A comprehensive program to install adequate warning devices, a comprehensive inspection program, and a documented priority program for the correction of defects, are examples of methods to minimize agency liability.

The most common defect occurring in roadways is potholes, which form as a result of freeze-thaw cycles and moisture. Generally, areas such as Montana, that experience extended cold spells followed by thaws, are the most susceptible to the formation of potholes. Highway engineers conclude that potholes are also caused by aging roads. The only cure being constant maintenance.

A issue raised in some tort claims is that of pavement surface potholes. The usual complaint is that the pothole caused loss of vehicle control or damaged the running gear of the vehicle. Investigation and analysis of the subject pothole can reveal, with a reasonable engineering probability, whether the pothole was sufficient to cause loss of control or the damage alleged.

The influence that potholes have on the motoring public may have some effect on accident potential. A motorist may decide to avoid a pothole and steer his vehicle away from the defect, exposing himself to collision with objects adjacent to the roadway, or with other vehicles. Hence, potholes may play an indirect role in some accidents.

Most "slippery" road cases involve a wet-weather accident in which an out-of-control vehicle slides along or off of the roadway and collides with another vehicle, a fixed object, or possibly

"flips over". Occasionally, the roadway surface was "slippery" due to mud or the spillage of a substance. Most often water is the lubricant.

In tort cases involving "slippery" roadway surfaces due to mud or water, the plaintiff must prove that an unsafe condition existed at the time of the accident, and that such condition was known, or should have been known, to exist, by the responsible governmental agency. Generally, proof of a "slippery" road condition requires an accident history that contains several wet weather accidents similar to the accident relating to the lawsuit, or unique or unusual circumstances.

Hydroplaning, a very technical pavement surface issue, also arises as a litigation matter. Highway engineers have responsibility for roadway factors affecting friction capability, such as pavement texture design and depth, and surface drainage, such as cross-slope, super-elevation transition, longitudinal grade, and length of the transverse drainage path. Agencies must design, construct, and maintain streets and highways in a manner that ensures proper surface drainage to minimize the probability of water accumulation under normal rainfall conditions.

Motorists must also accept responsibility for their driving behavior during periods of precipitation. A reasonable and prudent driver should recognize the greater potential danger of operating a vehicle in a wet roadway environment, and reduce vehicle speed to minimize the risk of losing control of the vehicle.

As in any roadway condition where the agency determines that the public should be warned of a potentially hazardous condition, a "Slippery When Wet" sign may be installed in advance of a roadway segment that has an unusually high number of wet weather accidents, a low skid test number, or a combination of the two. Installation of such a sign generally satisfies the government's requirement to warn the public of an unusual roadway condition.

Case Illustration - Brown vs. State of Montana

On June 25, 1984, David Brown was traveling on Federal Aid Secondary (FAS) Road No. 278 between Dillon and Jackson. Mr. Brown claimed that he hit a rough spot in the road, his rig was thrown off of the road, and he suffered various personal injuries. The plaintiff claimed that the defendants failed to repair the defective and dangerous condition in the roadway, failed to warn of the dangerous condition, or in the alternative, failed to close the road to use by the public.

The State claimed that it had no duty to maintain the road and that the county was responsible for maintaining the road under a maintenance agreement. However, the agreement also provided that if the county was unable to maintain the road, the State would do so. The State also claimed that it was immune from liability pursuant to legislative immunity.

On March 15, 1990, the judge entered an order approving the parties' settlement agreement. Pursuant to that agreement, the State of Montana and Beaverhead County each paid $5,000 to the plaintiff.

Case Illustration - Hoveland, et al vs. State of Montana, et al

On September 6, 1987, John Dinsmore was towing a trailer and a larger motor boat southbound on Highway 287, over the Toston Bridge, near Toston. A vehicle driven by Mr. Hoveland was approaching the Dinsmore vehicle on the highway. The boat trailer broke loose and veered into the northbound traffic lane hitting the Hoveland vehicle. Plaintiffs claimed that the State failed to maintain the public highway in a safe condition, allowed hazardous conditions to exist in the roadway such as bumps and holes which caused the trailer to break loose, and failed to properly warn public motorists of the hazardous conditions of the roadway.

The plaintiffs settled with Mr. Dinsmore for $235,000. The State claimed that the negligence of Mr. Dinsmore was the sole cause of the accident. On June 6, 1990, the judge entered an order approving the parties' settlement agreement. Pursuant to that agreement, the State paid $25,000 to the plaintiffs.

Winter Maintenance

Winter maintenance, including effective snow and ice control, is essential given the climate of Montana. The wide range of ice and snow conditions imposes an equally wide range of planning needs. Maintenance of roadways that have ranges from one inch of occasional snow cover, to those with minimums of several feet each year, require different planning. The first step in planning for snow and ice control is to develop a policy statement. Policy statements can range from; "we'll do nothing regardless of the amount of ice and snow" to, "we'll develop a system and work force that will immediately remove ice or snow from every major roadway down to bare pavement." While neither of these is practical, the true answer lies somewhere in between.

A number of factors need consideration prior to formulation of a policy. First is the public's reaction to ice or snow. Some communities' traffic patterns disintegrate in the presence of one or two inches of snow cover. Others are well-adapted and can manage under fairly difficult conditions. For most communities, hazardous areas such as hills, ramps, bridges, and some intersections, will demand immediate and continued attention. A priority system must be developed. A policy statement should cite the conditions which will initiate action, the nature and geographic scope of the action, and the extent to which the action will be carried out. A system of assigning values to sections of roadway, based upon traffic volume or system type, is recommended as a means of determining priorities. The value system should allow sufficient flexibility for emergencies and varying conditions in different areas, yet still enable dispatchers to select the most critical areas for assignment.

Alternating patches of snow or ice and bare pavement present a considerable hazard under any traffic condition. In areas where high speeds are attained, snow or ice patches can cause skidding and loss of control. Patches of ice that persist in shaded areas require special attention. Early application of sand, gravel, or melting agents will promote skid resistance on hills, curves, intersections and ramps, and should have a high priority at the earliest stages of any storm.

The first parts of a roadway to become slippery under winter conditions are bridges and

overpasses. Static signs, such as "Watch for Ice on Bridge", can become and accustomed feature of the landscape and not alert a driver at the necessary time. Flashing lights that turn on at near-freezing temperature, or ice detection systems that will not only provide a warning to motorists, but will notify maintenance personnel are recommended. Many Agencies have standby maintenance crews to treat bridges at the first indication of a potentially critical situation.

The public has become increasingly dependent upon radio and television broadcasts of snow and ice warnings, prerecorded telephone messages about highway conditions, and special warning signs for ice on roadways, bridges. In some areas, motorists check reports consistently before going on certain highways during winter months. Winter programs to remind the public of increased braking distances on snow and ice should be encouraged for media presentation.

In summary, winter operations are especially hazardous and extra care must be exercised for the protection of life and property. Operation of all types of snow plows and spreaders represents increased hazards. Too often motorists travel to close to these vehicles. Unseen curbs, manholes, bridge ends, traffic buttons, or islands can be a hazard. Rocks and debris in the roadway can cause damage when picked up by a plow. For many of these hazards, there are no specific safety precautions. The operator can only be alert to minimize possible damage. Good training, including the training of maintenance personnel and operators to know their equipment, combined with safety consciousness should be a management objective of every agency.

Case Illustration - Lewis, et al vs. State of Montana, et al

On March 10, 1989, Charles Lewis was killed when a staked, flatbed, tandem axle truck he was driving for Cenex Inc. collided with a state snowplow driven by Mr. Schwarz. The accident occurred on Highway 200, 28 miles west of Lincoln, in Powell County. Lewis's vehicle was carrying a load of agricultural chemicals. Visibility was poor due to fog. Schwarz backed his snowplow briefly into the Monture Ranch Entrance in order to execute a 180° turn.

The Lewis estate contended that Schwarz turned the truck around in a negligent manner, exposing Lewis to the danger of a collision. The State maintained that Schwarz exposed the snowplow to oncoming traffic minimally; that he drove reasonable under the circumstances in order to provide the best possible road conditions as quickly as possible for the safety of the motoring public; and that Lewis was speeding on black ice, failed to maintain a proper lookout and failed to turn his lights on, which amounted to negligent conduct under the conditions.

On February 7, 1992 the judge approved a compromise settlement of the claims of the estate of Charles Lewis and Cenex/Land O'Lakes against the State of Montana. The Lewis estate received $500,000 from the State. Cenex received $13,500 from the State on its $52,000 claim, and Schwarz received $20,000 from Cenex.

Case Illustration - Kaufman, et al vs City of Great Falls

This case arose when several retail establishments incurred alleged damage to flooring in their

stores. The parties claimed stains appeared on there carpets which were extremely difficult, if not impossible to remove. The plaintiffs claimed the stains were cause by foot traffic which was tracking in the ice removal chemical the city was using on the streets and crosswalks.

The city argued that the material inert and was not capable of causing the stains. Of interest to the claim a recently completed streetscape project that included colored concrete, planters and sculptured walkways. The plaintiffs argued that the materials used in the construction project were mixing with the ice melt and creating a substance which was staining the carpets.

The city denied liability based on the facts that it had properly administered, handled and utilized the ice melt chemical as per the manufactures specifications. After a thorough investigation city officials determined further, if any, by the plaintiffs should be directed at the manufacturer and distributor of the ice melt chemical.

Traffic Control Devices

Traffic control devices are commonly used to expedite traffic safely and efficiently through potentially high risk areas such as intersections, curves, and/or other sections of roadway which may present some type of risk to the motorist. The MUTCD defines traffic control devices as those "used to direct and assist vehicle operators in the guidance and navigation tasks required to traverse safely any facility open to the public."

Traffic control devices may be classified into three basic categories:

- Signs;
- Signals; and
- Pavement markings and delineation.

According to the MUTCD, all traffic control devices in these three categories should fulfill the following five basic requirements:

(1) Fulfill a need;
(2) Command attention;
(3) Convey a clear, simple meaning;
(4) Command respect of road users; and
(5) Give adequate time for proper response.

Most states adopt the National MUTCD (or some similar document) to dictate where, when, and under what conditions a traffic control device should be installed. It follows that, in most tort cases dealing with traffic control devices, the MUTCD (or some similar document adopted by the state) is introduced by either the defendant, or the plaintiff.

Traffic operation is not a precise science and is subject to engineering discretion based on sound engineering judgment. There are numerous correct answers to addressing traffic operational

problems or concerns. In most accidents, the drivers involved can always claim the presence of a different or additional traffic control device would have prevented the accident. There is no way to prove what did not occur. The question that should be asked is, whether the driver(s) had the opportunity to negotiate the roadway in a safe manner? With the appropriate devices in place, it is the responsibility of the motoring public to drive in a safe and prudent manner.

The MUTCD is used extensively in traffic operations. It has frequently been referred to as the "bible" for installation of traffic control devices and has been described erroneously as a publication that contains the standards for traffic control device applications. For clarification, the MUTCD does not contain any standard that specifies *when* or *where* to install a traffic control device. The decision to install a particular device is based on the engineering judgment of a trained professional. In some cases, a traffic engineering study may be required before this decision can be made.

Once the decision is reached to install a traffic control device, the MUTCD is used. The MUTCD essentially "tells" the traffic engineer that, if you intend to install a certain device, it must be of a certain size, shape, and color, installed at a specific or range of heights above the roadway, at specific distances from the roadway, or in advance locations along the roadway. For example, the MUTCD does not dictate where a STOP sign must be installed; but rather, if a STOP sign is to be installed, it must be red and white, octagonally shaped, and installed such that it can be seen.

The proper signing of roadway facilities is necessary if tort liability is to be minimized. The MUTCD classifies signs into four general categories:

- Regulatory signs (Stop, Yield, Speed Limit);
- Warning signs (e.g., Narrow Bridge, Deer Crossing);
- Guide signs (Route Markers, Destination Signs); and
- Signing for Civil Defense.

Of these four categories, tort cases almost always involve only the first two categories of regulatory or warning signs. The majority of these cases involve claims against governmental agencies for either improper placement of a sign, (failure to place a sign where one is needed), or failure to maintain the sign.

Numerous accidents have been reported due to a driver's inability to see critical road signs, resulting in both injury and death. Many of these accidents have resulted in claims being filed for recovery of damages/losses received in these accidents. Obstruction of road signs can be due to many factors. Trees, shrubs, and bushes are the primary road sign obstruction problems, but buildings, larger vehicles, and even other road signs can also obstruct the view.

Signalized intersections are generally located at high-volume locations where allocation of right-of-way is critical to traffic safety. Malfunctioning traffic signals create the potential for traffic accidents A common claim when an accident occurs at a signalized intersection is that "the signal was GREEN on all approaches." Although such a condition is possible, new traffic signal equipment virtually eliminates that possibility with conflict monitors built into the controllers.

It is extremely important that you maintain traffic control devices to insure proper functioning. When an agency has actual or constructive notice of a traffic signal malfunction, maintenance and repair work should commence as soon as feasible. Failure to do so opens the door for possible tort litigation.

The MUTCD outlines the functions of roadway markings as follows: "They serve as a very effective means of conveying certain regulations and warnings that could not otherwise be made clearly understandable." The MUTCD goes on to say that markings make it possible to convey these regulations and warnings to the driver "without diverting his attention from the roadway." This is an important concept to keep in mind when discussing signs and markings. If the driver is supplied with too much information, the driver's attention may be diverted from the roadway. Likewise, if information is not supplied adequately along the roadway, the driver's attention will be diverted as he searches for the information necessary to accomplish the driving task. The majority of the tort cases involving markings result from either inadequate or incorrect roadway markings.

Pavement markings provide guidance for motorists and inform them of where no passing zones are located. A centerline is normally found on most paved roadways, especially those that accommodate more than 1,000 vehicles per day. Many low volume, paved county and city roadways do not have a centerline. A driver is responsible for remaining on the right half of the roadway, therefore, a centerline is not absolutely required. The lack of a centerline, alone, should not be considered the primary factor of a sideswipe or head-on-accident. Drivers should not be crossing the centerline of a roadway in front of an opposing vehicle with or without the presence of a centerline.

White edges are not required on roadways other than Interstate Highways and multi-lane divided highways. They are not very effective when placed on a paved roadway that has light colored shoulders because the contrast between the dark pavement and the light shoulders already clearly identifies the edge of the pavement. White edge lines generally are not provided on narrow pavements because their presence encourages motorists to move toward the center of the roadway.

An important, note in the application of traffic control devices according to the MUTCD, is the use of the words "shall," "should," and "may" in the description of specific conditions concerning these devices. As addressed in the MUTCD manual, these words are defined as follows:

> **shall** - A mandatory condition. Where certain requirements in the design application of the device are described with the "shall" stipulation, it is mandatory when an installation is made that these requirements be met.
>
> **should** - An advisory condition. Where the word "should" is used, it is considered to be advisable usage, recommended but not mandatory.
>
> **may** - A permissive condition. No requirement for design or application is intended.

Obviously, the "shall" condition is most subject to tort claims since there is minimal discretion

involved in such applications. The "should" and "may" conditions are of a more discretionary nature; and as such, are less subject to litigation. Special consideration should be given to these latter two conditions because a governmental agency may be required to justify why a signing condition which the MUTCD may have recommended with the term "should" was not initiated. Some recent court cases have indicated the word "should" really means "shall".

Case Illustration - Jones vs. City of Billings

This is an automobile intersection accident which occurred in Billings, Montana at the intersection of Monad Road and 24th Street West, on October 15, 1993. Weather was not a factor in this claim. The plaintiff allege a lagging left turn light was confusing, causing the ensuing motor vehicle accident in which she was involved. Significant property damage and bodily injury claims were made by the plaintiff.

The plaintiff argued that as she waited for oncoming traffic to clear, her light turned red and she assumed the light was red for oncoming traffic. She pulled into the street and was broadsided by the oncoming traffic with a lagging green light. She alleged the lights were mistimed. The city police officer investigating the incident watched the light timing sequence and noticed that the traffic one way had a red light and the other way had a green light and felt that it must be wrong, No citations were issued and his report indicated that the lighting sequence was incorrect.

The city defended the claim based on an investigation and testimony of an expert that revealed the signal was function properly. The city argued that it had done nothing wrong and the intersection met all current traffic standards. The jury determined that, although the signal and intersection were proper, the intersection was confusing. It awarded damages $20,000 to the plaintiff.

Case Illustration - Whiting vs. State of Montana, et al

On August 19, 1987, Ms. Whiting was traveling west in the eastbound lane of I-90 in Butte when her van collided head-on with the Pradas' car. The path taken by Whiting, which resulted in her heading the wrong way, was disputed. The State presented evidence that Whiting entered the interstate properly and then made a U-turn, causing the accident independently of any state negligence. Whiting testified that she entered the interstate via the exit ramp.

State highway employees had failed to reinstall certain warning signs after work was completed on the off ramp, and though there were two "Wrong Way" signs in place, the jury apportioned negligence 58% to the State for inadequate signing and 42% to Whiting for winding up headed the wrong way on the interstate.

On April 30, 1991, the Supreme Court affirmed the jury verdict and judgment awarding the plaintiffs $1,522,120 for injuries sustained in a head-on collision.

Roadway Design

Roadway design is typically defined as the physical proportioning of the geometric features of a traffic-carrying facility. Design engineers will usually incorporate the most recent geometric design criteria (or agency standard) when designing a new roadway, unless unique circumstances exist. National guidelines do not imply that existing streets and highways are unsafe, nor do they mandate the initiation of improvement projects. Most often it can be demonstrated that roadways are performing satisfactorily with older design features.

It is often the case that a rural roadway cannot be ideally designed, much less constructed, because of monetary constraints, right-of-way availability, topographic conditions, environmental, ecological, or historic considerations, or even sociological concerns. Failure to meet existing guidelines does not necessarily mean that the constructed roadway is unsafe, inefficient, or that the design was an act of negligence.

Design and operational reviews should be conducted "in the field" both before and after constructing roadway geometric improvements. Reviewers should be alert for changing conditions, such as increased traffic movements or changes in the mix of vehicle types. Inspections are needed for both active and completed projects.

Case Illustration - Hern vs. State of Montana

This claim arose as a result of a three vehicle collision on June 5, 1992, on Highway 93 just south of Polson, in which Ms. Hern, a passenger on a motorcycle, was killed. The southbound section of the highway, where the accident occurred, splits into two lanes to accommodate slower moving traffic on a hill. At the crest of the hill, South Hills Road intersects Highway 93. As the motorcycle, on which Hern was a passenger, came up the hill in the passing lane, cars turning left at the junction were backed up in the passing lane, forcing the motorcycle driver to brake. Due to excessive speed and a bald rear tire, the motorcycle driver failed to come to a stop and rear-ended the vehicle ahead of him. This caused the motorcycle to slide into the oncoming traffic lane where Ms. Hern was run over by a northbound truck. The plaintiff initially demanded the tort limit of $750,000.

Plaintiffs alleged that the design of the roadway forced faster moving traffic into the passing lane. This created a hazard because southbound vehicles in the passing lane were forced to stop at the top of the hill in the event traffic was turning left.

On April 28, 1994, the Court approved the parties' settlement of $75,000. In addition to this settlement sum, the State agreed to temporarily place a warning sign for southbound traffic indicating "Turning Vehicles Ahead", and a flashing light at the intersection where the accident occurred. The State pledged support for, but did not guarantee, the completion of a state project which would result in the widening of the road and the placement of a turn bay at the intersection.

Case Illustration - LaSalle et al vs. Butte

This claim resulted from a two vehicle collision where a passenger in one vehicle was killed and the driver and other passenger in the same vehicle sustained serious injuries. Facts of the accident are such that on August 30, 1994, in the mid-afternoon on a clear, sunny day, an individual was driving his motor vehicle south on Montana Street within the city limits of Butte, Montana at approximately 57 mph. He was over the legal limit for intoxication. He had three passengers in the vehicle with him. As he approached the crest of Montana Street, where it forks with another road, he was in the wrong lane and struck the other involved vehicle head on.

The speeding vehicle, which was in the wrong lane, was not insured. The attorney representing the estate for the dead child has filed a claim against Butte Silver Bow alleging defective design of this particular intersection.

Montana Street, in this area, is a two land city street. It crests a slight hill and, at the immediate bottom of the hill, there is a fork running to the southeast which is Holmes Avenue. Montana Street continues south. The posted speed limit is 25 miles per hour and the street is designed as such. In this instance, the plaintiffs are alleging that the road is improperly designed and it was the design of the road which caused the accident.

The city is arguing that the intersection is not dangerous for vehicles traveling within the posted speed limit. Further, it alleges the inability of the drive due to alcohol impairment, is the cause of the accident. An adverse fact for the city is that the intersection has never been designed. Discovery in the case is ongoing.

Case Illustration - Juedeman vs. State of Montana. et al

This case arose from a single vehicle accident on September 5, 1983, at approximately 4:30 a.m. on 13th Street, Highway 459, near Ayrshire Diary in Great Falls, Montana. Plaintiff's children, Rick Burkstrand age 13, and Charles Mesler age 11, were injured. Mr. Bennyhoff, the driver of the truck, drove off the east side of the road where it struck a telephone pole and a rock and came to rest. Bennyhoff died as a result of the accident.

The plaintiff alleged that the defendants were negligent in the designing, striping, building, refinishing and maintaining of 13th Street South, or in the supervision and inspection of those activities, and of their failure to warn travelers of hazards of the road.

On April 30, 1987, the judge dismissed the defendant Cascade County with prejudice from this case after Cascade County settled for $300,000. On March 13, 1989, the judge also dismissed the State of Montana after the State settled for $20,000.

Bicycle/Motorcycle/Pedestrians

The bicycle has become an important element for consideration in the highway safety process. Fortunately, it is practical for most of the mileage needed for bicycle travel to be comprised of

the street and highway system much as it presently exists. At the same time, measures such as paved shoulders, wide outside traffic lane (14 ft min) if no shoulder, bicycle-safe drainage grates, adjusting manhole covers to the grade, and maintaining a smooth, clean riding surface, are generally of low capital intensity and can enhance considerably a route's safety.

At certain locations or in certain corridors, it is appropriate to supplement further the existing highway system by providing specifically designate bikeways (for either exclusive or nonexclusive bicycle use). To provide adequately for bicycle traffic it is necessary to be familiar with bicycle dimensions, operating characteristics, and requirements. These factors determine acceptable turning radii, grades, and sight distance, etc.

The driving tasks, and the associated risks, are quite different for motorcycles from those for automobiles. The small size and high acceleration capability of motorcycles make them very maneuverable, but in a collision the rider has almost no protection. A major reason for motorcycle accidents involving other vehicles is a failure in information processing on the part of the drivers of the other vehicles. Motorists typically fail to detect the motorcycle in time to avoid the collision. These are classical cases of the "look but fail to see" type of accident. Motorcycles on public roads are relatively rare in comparison to cars and trucks, so the element of expectancy plays a role here. In addition, a number of characteristics of the motorcycle itself, and the rider(s), are determinants of the claim. Motorcycles being much smaller, and having a different profile, than other motor vehicles, their presence, distance, and speed are difficult to judge. Moreover, riders often wear dark clothing, which makes them somewhat inconspicuous.

A pedestrian is any person afoot, and involvement of pedestrians in traffic is a major consideration in highway planning and design. Pedestrians are a part of every roadway environment and attention must be paid to their presence in rural as well as urban areas. The urban pedestrian, being far more prevalent, more often influences roadway design features than the rural pedestrian does. Because of the demands of vehicular traffic in congested urban areas, it is often extremely difficult to make adequate provisions for pedestrians.

The design of roadways emphasizes the safe and efficient movement of motor vehicles. Little though is typically given to pedestrians. At various times all users of the roadway system are pedestrians. The need to move both vehicles and pedestrians efficiently and safely at the same locations presents a significant challenge to the traffic engineer. As the competition increases between drivers and pedestrians for space on the street, the problems become more severe. Pedestrian accidents represent a significant proportion of traffic accidents (15% to 45%) depending on the area.

Case Illustration - Victoria & Eriel Mayer vs City of Billings

On July 7, 1994, Victoria and Eriel Mayer were riding a tandem (built-for-two) bicycle on a city street in Billings. Weather was not a factor. The city had conducted a chip-sealing project in the area. The plaintiffs, while riding their bicycle from a street with no chip seal onto a street which had been chip sealed, lost control, fell and both suffered injuries.

The plaintiffs allege that the city was negligent in their chip sealing process. They claim that the city left piles of ship seal at the intersection in question and that they failed to warn of the dangerous road condition.

The defendant maintains that the chip seal process was conducted per industry standards. The material was applied correctly, the distribution was correct, the "spoilage" areas were raked our, and the material was left in place to "cure" for an appropriate period of time. The city maintains they did nothing wrong, the plaintiffs were familiar with the area, the condition was open and obvious and with the exercise of normal caution the plaintiffs could have avoided the accident and resulting injuries. Discover in the case in ongoing.

Case Illustration - Walden vs. State of Montana

This case arose in July 1987, when Dirk Walden was bicycling down the on-ramp of Gore Hill onto I-15, south of Great Falls and his tires caught in a seam between the asphalt ramp and concrete travel lanes. The plaintiff fell and broke his clavicle, injured his cervical vertebrae, and received internal closed head injuries. Walden alleged the seam was a hazard to bicyclists and other vehicles and that the Highway Department knew of the condition but failed to properly maintain the roadway or place warning signs.

The State contended the seam required correction through long-term rehabilitation, not through patchwork maintenance, and warnings would not alleviate any problems. The State also maintained that Walden's injuries resulted from his own comparative negligence. Walden sought damages at trial in excess of $800,000. Just prior to trial, Walden had offered to settle for $125,000 and the State had offered $55,000.

On March 8, 1989, after deliberating four hours, the jury returned a unanimous verdict in favor of the state. It found 12-0 that the state was not negligent in its highway maintenance; 8-4 that the state was negligent in failing to warn; and 12-0 that any negligence was not a legal cause of Walden's injury.

Animal/Vehicle Conflicts

Montana experiences approximately 17,500 animal vehicle conflict accidents per year, with over 95% of those conflicts involving wildlife. The primary responsibility of transportation agencies, in this regard, involves migration crossing encounters by warning with traffic signs. With domestic animal conflicts, this safety responsibility extends to right of way control. This control can be the responsibility of the state as well as the abutting property owner(s). The problem is magnified by the vast, open, expanse of roadway in the state.

Case Illustration - White vs. State of Montana, et al

This case arose in August, 1991, when the Lynds, driving a motor home, hit a moose crossing

highway 93 between Hamilton and Darby. The moose fell into the oncoming traffic lane, where it was hit by a vehicle driven by Mrs. Murdock. Mrs. White was in the front passenger seat of Murdock's vehicle, which rolled. Mrs. White's wrist was broken. In addition to charging that drivers Lynds and Murdock were negligent, plaintiffs claimed that the State was negligent for failing to install and maintain moose crossing signs.

The Court agreed with the State's argument that plaintiffs failed to prove the accident was caused by the lack of a sign. The Court based this ruling on Mr. Lynds' testimony that the moose entered the road 5 to 8 feet in front of him and that he could not have avoided it even if he had been driving slower and with his headlights on high beam. Mrs. Murdock testified that she would have driven no differently had she seen a moose crossing sign.

On June 27, 1994, the Montana Supreme Court affirmed the district court's October 19, 1993 order granting separate motions for summary judgment and dismissing the plaintiffs' suit against the State and defendants Murdock and Lynds. The Court held that the Whites failed to establish material issues of fact as to whether actions or inaction of the State of Montana proximately caused their damages. The White's petition to the Supreme Court for rehearing was denied on July 29, 1994.

General Hazard Warning

The liability for improper traffic signalization, signing, and pavement markings is an especially important area because of the increasing number of negligence claims brought against agencies who operate roadways. The decision to provide or withhold a certain service is discretionary in nature. Thus, negligent design of a traffic signal, or the failure to erect a traffic signal or sign may be discretionary in nature and protected from liability. Immunity usually attaches to governmental decisions about signs, signals, or markings if the government entity shows that the plan, design, or program has been adopted after reasonable consideration and deliberation. The results of cases brought against public agencies suggest that evidence should show that the decision was :

(1) Reasonable;
(2) Duly prepared and approved, and
(3) Not arbitrary or capricious.

Although it can be argued that immunity from liability does exist, the discretionary field of activity should not be used to justify the omission of obvious safeguards for the protection of the public. The failure to provide adequate warning is an abuse of discretion and can create liability. Whether the hazardous condition is temporary (in the process of being repaired), or permanent (a dead-end street), proper and adequate warning (signs, barriers, flashing lights, etc.) must be used to convey to the motorist/pedestrian the danger to be faced. If the condition has been recognized as hazardous, the courts require warning when repairs cannot be made within a reasonable period of time. However, the warning devices will be tolerated only for a reasonable period of time, just until repairs can be made. If a warning sign is allowed to remain for an unreasonable period of time, without repairs being made, the courts will consider that the public entity is maintaining a

dangerous condition of public property and the public entity will be just as responsible for injury or loss as if it had done nothing once it had notice.

Other Illustrative Cases - Pending

On January 1994, 7:50 a.m., the claimant was driving a 1980 Honda Accord on a county road, which she alleges is extremely narrow. The weather conditions were snow, and road conditions were snow covered. The plaintiff claims that, while traveling the road in a slow and cautious manner, as she came to a crest of a hill and was beginning to descend, a county snowplow/sander was plowing snow and coming from the opposite direction.

The claimant alleges that the snowplow was driving over the center line of the road. As a result of the narrow road and the snow plow over the center divider she could not avoid the accident and collided with the oncoming snow plow.

The vehicle accident report states that the claimant lost control of her vehicle and she slid into the front end of the snowplow, then spun off the right side of the road. This resulted in an injury accident and the claimant's car is a total loss. Suit has been filed against the county demanding payments in excess of $200,000.

An early morning single vehicle accident, involving a pick-up truck, occurred in February 1994. The claimant alleges that his accident happened because the county negligently placed a warning sign for a curve in the road. They claim that, although the roadway turns left, the warning sign shows the curve is to the right. They claim that the sign used is not mentioned in the MUTCD.

Their claim alleges that if the county used the appropriate warning sign, the claimant's vehicle would not have slide off the roadway, causing total loss to the vehicle and injury to the passengers. The vehicle accident report states that the claimant, traveling on the roadway, came to a sharp corner in the road which was properly signed with a warning sign. They failed to negotiate the corner, drove off the road and rolled down the bank. The driver (claimant) was cited for failure to have the vehicle under control and inattentive driving. A lawsuit has been filed against the county requesting the maximum amount allowable under Montana Law.

A County snowplow/sander was traveling down a Montana highway, going through an incorporated city. An accident occurred involving a pedestrian. As the County vehicle was approaching an intersection, the pedestrian stepped onto the roadway in a crosswalk. The driver of the County vehicle did not see the pedestrian until she entered his lane of travel. From the right side, his view of her was obstructed by vehicles parked along the curb, right up to the crosswalk. The pedestrian did not see the county truck because the pedestrian was looking the other direction. The operator of the county vehicle reacted as quickly as possible but still hit the

pedestrian, resulting in injuries to the individual.

An investigation determined that parking was allowed too close to the intersection. The state is responsible for maintenance of the roadway. Following the accident, the state performed remedial measures to restrict parking and thereby create a "clear zone" for a considerable distance before the crosswalk. The remedial measures included the painting of the curb to designate a no parking zone and the installation of a sign which indicated no parking from the sign to the crosswalk.

A lawsuit has been filed naming the County and the State as defendants.

ACCIDENT REDUCTION AND SAFETY IMPROVEMENTS

Background

The existence of an efficient and safe street and highway system is an agency responsibility and is expected by the public. Inefficiencies or omissions in this system may result in hazardous conditions causing injuries and death and a corresponding increase in tort claims. Officials who are charged with the design, construction, and maintenance of Montana's streets, roadways and highways have the continuing responsibility of making them more safe and efficient.

It is quite apparent that the most effective method of limiting liability and tort claims is to reduce accidents. The application of an effective reduction methodology is a key element in the overall risk management process. As a minimum, an effective accident reduction methodology involves the following key activities:

- Identify high-accident locations (HAL'S);
- Analyze high-accident locations;
- Formulate safety countermeasures;
- Establish improvement priorities;
- Implement, wherever possible, immediate improvements and schedule for the implementation of *long-range* improvements; and,
- Evaluate program and countermeasure effectiveness.

Collectively, these activities offer a means by which accident frequency and severity may be reduced with a resulting reduction in claims.

A variety of Federal legislation has provided mandates for the implementation of safety improvement programs, with the focal point on accident reduction. Perhaps the most significant legislation was the Highway Safety Act of 1966, which was passed by Congress with virtually no opposition. Section 402 of this Act required each state to implement a highway safety program to reduce traffic accidents, as well as traffic deaths, injuries, and property damage. Federal funds were allocated to support these programs, while each state's governor was given responsibility to implement projects and monitor federal funds. The Highway Safety Act of 1973 established the use of positive incentive grants for states demonstrating reduced traffic fatalities under their traffic safety programs. The Highway Safety Act of 1982 specifically addressed accident data collection and reporting systems. The 1982 Act required the Secretary of Transportation to provide Congress with an annual report on state accident data systems. This report contains a compiled list of highway fatalities and vehicular accidents for every state. This data is compared so that states with relatively poor safety records can be identified and given additional guidance by the federal government.

The most recent noteworthy national legislation was sponsored by the Federal Highway Administration (FHWA) in conjunction with the National Highway Traffic Safety Administration (NHTSA) and the Federal Transit Administration (FTA), which issued regulations to implement Section 1034 of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. States are required to use these regulations to develop, establish, and implement highway Safety Management Systems (SMS) beginning in fiscal year 1995. This SMS shall encompass all public roads, except those federally owned, and address all roadway, human, and vehicle safety elements. The SMS must ensure that all issues of safety are considered and appropriately included in all phases of highway planning, design, construction, operations, and maintenance policies and procedures. The application of effective accident reduction methodology is essential to meeting these requirements.

Accident Data

In almost all cases, traffic accident data originate from traffic accident reports submitted by the state or local police department. Most states impose an accident reporting "threshold" of between $0 and $500; reports are not submitted for property damage only accidents below this threshold. The dollar amount relates only to the amount of "damages" to property. Reports that are submitted are assigned a unique case number or report number so as to identify each accident. The reports are subsequently place in a computerized accident data file for future reference.

Critical to the application of any accident data methodology is an accident data system in which accident data may be stored and retrieved in an efficient, logical, and timely manner. For the state and most larger municipalities, this will invariably involve the use of a computer to handle the increased volume and complexity of the data. Accident data is accumulated on a statewide basis. The information is usually stored by roadway location, for use in later accident analysis procedures. It is not uncommon, however, for smaller municipalities to store accident data by date, accident number, or driver name. After the accident information has been coded and stored in the computer, the actual report forms are filed and maintained for additional review.

Section 409 of 23 U.S.C. Provides confidentiality protection of accident analysis to establish high accident locations and priority ranking lists. The code states the following:

> *"Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data complied for the purpose of identifying, evaluating or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway highway crossings, pursuant to Sections 130, 144, and 152 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists or data."*

While working with such information, each agency employee accepts the State's confidentiality

interest. This includes responsibility for its confidentiality, including but not limited to, protection from dissemination or release to parties known or unknown involved or contemplating litigation as well as security in any electronic data base in which it is incorporated.

High Accident vs. Hazardous Locations

The identification of high-accident locations is an important activity in a total accident reduction program. A *high-accident location* (HAL) may be defined as a location that experiences abnormal frequencies, rates, or severity of accidents. These high-accident locations, however, do not necessarily mean that the location is a hazardous one. High accident experience at a given location may be caused by one or more of the following reasons:

(1) Random occurrence (The laws of probability);
(2) High traffic volume - this may result in high-accident frequency even though the accident rate or accident severity may be relatively low compared to the other high-volume locations;
(3) Low traffic volume - the occurrence of only one or two accidents may result in a high accident rate; and
(4) High accident severity (e.g., many fatal injury accidents) at a location may be caused by specific accident circumstances and may not necessarily be the result of a dangerous roadway condition.

A **hazardous** location differs from a **high-accident location** in that it presents a risk to the driver in terms of a high probability of an accident. Also, a potentially dangerous condition may exist at a site even though past accident records may not define the site as a hazardous one. For example, locations with slippery pavements, narrow bridges, or rigid fixed objects near the highway may have a high accident potential without having a history of high-accident occurrence.

High Accident Location (HAL) Identification

A number of methods may be utilized to measure or identify high accident locations. The most common measures include a combination analysis of the total number of accidents at a site (frequency), accident rate, and accident severity.

The accident frequency method is the criterion most commonly used to judge whether or not a location is a high accident site. In this method, a predetermined accident threshold number is assigned to every site that is to be analyzed. At the end of every year, the accident file is searched to determine the number of accidents at each site. If the number (frequency) of accidents exceeds the predetermined threshold value, then the site is considered to be a high accident location. The threshold values are usually chosen such that a reasonable number of high accident locations may be identified. After identifying the high accident locations, the sites are generally ranked in descending order by accident frequency. The accident frequency method is useful mainly as a

preliminary study tool and should be supplemented with other accident analysis methods. The principal limitation of the frequency method is that it does not take into account traffic volumes at the study site.

The accident rate method considers the accident frequency (number) in relation to the total volume of traffic at a site (the total traffic volume is commonly referred to as vehicle exposure). Specifically, the accident rate is the accident frequency divided by the vehicle exposure at a site. As with the frequency method, the accident rate method assigns threshold accident rates such that sites with rates exceeding this predetermined threshold value will be identified as high accident locations.

The accident severity method is used to identify and/or rank high accident locations according to accident severity. Accident severity has been defined by the National Safety Council to include the following:

(1) **Fatal Accident** - one or more fatalities;
(2) **A-Type Injury Accident** - (Incapacitating Injury) - bleeding wound, distorted member, or person carried from scene;
(3) **B-Type Injury Accident** - (Capacitating Injury) - bruises, abrasions, swelling, limping, etc;
(4) **C-Type Injury Accident** - (Probable injury) - no visible injuries, but complaint of pain; and,
(5) **PDO Accident** - Property damage only (no injury).

A combination of two or more of the above methods is desirable to minimize erroneous identification of a high accident location due to the limitations of any single method. The *frequency rate* method is a combination method that considers both accident frequencies and rates. A typical application of this method is to select those sites that meet the minimum frequency criterion and rank them by accident rates.

Severity methods are commonly combined with rate methods. One technique involves the identification of locations with a minimum frequency of severe accidents (fatal and/or injury) in a given time period.

The optimum method for identifying high accident locations would, of course, consider all three accident measures: frequency, rate, and severity. One method of this type utilizes an equation incorporating all measures to calculate an accident experience index (AEI) for each analysis site. Another method which combines three measures is to rank each location by each method and obtain an average rank.

It is the responsibility of the agency to determine which combination method is most suitable for its specific needs. The motivation here is to stress the desirability of applying a combination method as opposed to only one method (e.g., frequency method only). This will provide a more feasible process for identifying high accident locations.

Analyzing High Accident Locations

The process of analyzing high accident locations is necessary so that appropriate countermeasures may be proposed. Analysis of a site involves a complete review of all data collected, as well as field inspections, to aid in selecting appropriate improvements. As mentioned earlier, data collection and review are the first steps in analyzing high accident locations. The following list contains some of the most common information that may prove useful in the high-accident location analysis:

A. Computer listing of selected data items for each accident at the identified locations.
B. Collision diagrams (may be computer-generated or manually drawn).
C. Copies of police reports of accidents at each accident site.
D. Review of photolog film and data from site, or field inspections conducted to observe obvious correctable deficiencies related to geometric or operational problems.
E. Condition diagrams of the site showing all physical features of the location (road width, sign locations, pavement markings, etc.).
F. Traffic and Roadway Data (skid numbers, ADT, turning movements, speeds, roadway capacity, etc.), as available.

In addition to the data collection and review process, on-site observation of high accident locations provides further insight in terms of recommending appropriate countermeasures. It is important, however, to review the collected data before planning a site visit and to identify conditions which may warrant special consideration (e.g., fixed object near roadway, or large number of rear-end collisions). Observations should be scheduled to coincide with apparent significant accident characteristics (e.g., nighttime or wet weather conditions).

The combination of an on-site observation and the data review and analysis provide the cornerstones for the successful identification and recommendation of countermeasures. Proposed countermeasures (or safety improvements) require careful consideration to insure their effectiveness and usefulness.

Develop Safety Countermeasures

The principal motivation behind analysis of high accident locations is to identify specific accident patterns. Once these patterns have been identified (through data analysis and on-site observation), countermeasures should be recommended to solve these observed patterns. Accident pattern tables are commonly used as an aid in listing all reasonable countermeasures for given accident patterns.

Having identified several possible countermeasures, economic analyses or cost-effectiveness techniques should be used in choosing the countermeasures with the greatest expected accident savings and the least accident reduction factors. The factors reflect the percent reductions in

related accident types to be expected if a certain countermeasure was implemented. General countermeasures for accident patterns and probable causes, and the percent reductions are presented in the table at the back of this document.

Establish Improvement Priorities

A governmental entity should have a rational basis for establishing a ranking for proposed improvements. The ranking system should be based on the improvements' potential for reducing accidents, particularly the severity of accidents. Consideration should be given to the improvement projects that have the best return (reduction of accidents) for the investment.

The priority ranking of sites, where safety improvements will be implemented, may be determined upon completion of the economic analysis. A single economic measure (e.g., cost-effectiveness method) or a combination of several methods may be used in the ranking process. The ranking list should include all locations for which countermeasures are proposed, and in which the expected net benefits are positive. The highest ranking location (i.e., the location where countermeasures should be implemented immediately) is the location having the greatest expected benefit or savings. The priority ranking method is useful not only in terms of saving money, but also in terms of justifying (e.g., in a court of law) why one project may have been implemented before others.

Implementation/Programming of Improvements

Once the identified high accident locations have been prioritized according to a logical ranking system, funds should be allocated to the highest ranking location as rapidly as possible. Subsequent safety improvements should be accomplished according to the accepted ranking system, and should continue until all projects are completed or funds have been depleted.

The scheduling of roadway improvements must be accomplished within budgetary constraints. Safety improvements must share available funds with roadway operational improvements as well as projects for replacing obsolete roadway features. If a governmental entity is defending itself against an accusation that it should have funded a safety improvement, that entity must be able to explain the basis for its decision not to fund that improvement. Once again, documentation of the basis for that decision, particularly if the decision was based on a logical programming procedure, could be the most important evidence presented by the defense in a tort-related action.

A well-conceived and well-administered safety-improvement program is an essential element of the overall plan to minimize tort liability on two counts. First, an effective programming effort can reduce accidents, especially the more severe ones that can result in large claims. Second, in the event of a trial, a logically formulated and well-documented programming procedure is a necessary tool for the defense to show the propriety of the agency's actions.

Evaluation

After safety improvements have been implemented, the sites should be studied and evaluated to:

- Determine if there are any serious problems that were not expected. If problems are encountered, the improvement should be altered to alleviate them and the changes should be recorded and documented.
- Determine the overall effectiveness of the improvement in terms of reducing accident frequency and severity potential.

A common evaluation technique is the *before-and-after* study. As the term suggests, this study involves the review of a site both before and after an improvement has been installed to determine the effect of the improvement on accident experience. It can be said that comparing the accident experience of the "after" condition to the "before" condition is equivalent to comparing with the "do-nothing" condition. Whatever evaluation technique is used, the "do-nothing" condition should be the basis for comparison.

HIGHWAY TORT LITIGATION DEFENSE

Background

The United State's system of government has selected courts as the primary means of resolving conflicts. Courts settle controversies between persons, and between persons and state. The court is the judge and the judge is the court. The terms are used interchangeably. The basic function of the court is to apply law to the facts. The facts are determined by a jury, if one is used. If a jury is not used, the court also serves as the finder of the facts. In any lawsuit there are two parties involved, the plaintiff and the defendant. The plaintiff makes the original complaint against the other party. The other party thus becomes the defendant.

The judicial system here in the United States is a dual system consisting of both state courts and federal courts. The state courts consist of Supreme Courts, intermediate courts of appeal, and trial courts. Litigation in which agencies become involved will most often be in a state court; as a general practice its rules of procedures parallel the federal system.

The Montana Tort Claims Act provides that trials for which state agencies are involved shall be held in the county where the accident occurred. Being that the Tort Claims Act applies only to governmental functions (as opposed to functions of a proprietary nature), the location requirement applies only to trials in which governmental functions are being considered.

Pre-Trial Activities

As stated previously, following a high exposure accident, or upon notification of a lawsuit, a complete investigation should be made. Claims involving the State of Montana will be investigated by the Office of Risk Management and Tort Defense Division. Cases involving cities and towns or counties, represented by the MMIA or MACo, will be handled by the claim administrator for the appropriate program.

When an injury occurs, most jurisdictions require that before any action can be filed, a notice must be given of the injury to the governing body within a specified period of time. Failure to abide by that requirement may preclude any legal action from being taken. A statute of limitations is a legally-imposed time limit for filing lawsuits. After the time limit expires, it is no longer permissible to file a suit.

As prescribed in **27-2-204, MCA**, for tort actions - general and personal injury, the statute of limitations in the State of Montana is three years. This means that a period of up to three years may elapse between the time of the plaintiff's accident (or whatever action is the basis of the

lawsuit), and the time the lawsuit is filed. However, there are various exceptions and conditions to this general rule. One exception is that the three year statute of limitations is only imposed on persons 18 years of age or older; it does not apply to persons under the age of 18 (minors). Hence, if a minor is involved in an accident, the three year statute does not take effect until the person reaches the age of 18. For example, say an infant child (i.e., only a few days old) is a surviving occupant in a vehicle which is involved in an accident. Under the provisions of the current statute, the person (then an infant) would still be eligible to file a lawsuit after a period of nearly 20 years has elapsed. A second exception to the statute applies to persons who are judged legally incompetent. The statute does not take effect on such persons until they are relieved of incompetence status.

One of the "conditions" of the statute of limitations is that the plaintiff must provide some type of notice (usually written) to the person or entity who is to be sued. This is known as *pre-statutory notice*. The basic idea behind notice is that it is unfair for a plaintiff to "lay in the weeds" for some period of time after an accident has occurred and then file a lawsuit at the end of the three year statutory period. If such were the case, the defendant would be at a disadvantage since evidence and facts would be more difficult to collect and witnesses would be harder to find.

In the event of a serious accident, that may result in a lawsuit, your claim organization should immediately be notified. They can assist you with implementation of the appropriate type of investigative work. There are several reasons for this. First, the individuals employed by these organizations are more highly trained in the claim process and know exactly what needs to be obtained. Second, routinely collected information and photographs would likely not be privileged information and the plaintiff's counsel could easily obtain it. If your claim organization is instructed by legal counsel to gather information, this information could be considered part of an investigation for the purpose of preparing defense. As such, the information would likely remain privileged.

Privileged information is information that is confidential between the attorney and his client and is protected from disclosure. Any communications between an attorney and his client, even photographs taken during the investigation of an accident, may be privileged, since photographs are considered a form of communication.

Many lawsuits are decided without a trial. These decisions result from the use of a procedure known as a summary judgment. This procedure was created to avoid trial when there is no genuine issue as to any material fact in dispute. If there are no facts in dispute, the only issue before the court is the legal effect of those facts counsel will likely submit a motion for summary judgement to the court. A determination on this motion can be decided without a trial.

In most jurisdictions the law permits the taking of depositions from anyone, even if they are not a party to the suit, as long as they have some information pertinent and relevant to the matter at hand. The depositions themselves are very similar to a mini-trial; the only participants not present are the judge and the jury. The deposition generally will be conducted in an attorney's office, before a court reporter who has the authority to swear in the witness(s). If a deposition is being taken by the opposing side, your lawyer should be present to protect your interests and those of

your agency, and to object to questions that could not properly be admitted into court as evidence. The person being deposed will be questioned by an attorney, and questions and answers recorded. The witness' attorney will be given the opportunity to cross examine when the opposition is finished. Not only are depositions important in guiding the attorney in preparing the case, but the deposition also becomes a very important weapon in court. Although depositions cannot be introduced as evidence if the witness is present in court, they can be used to impeach testimony if the answers in court do not agree with the answers in the deposition. This can affect the witness' credibility and damage the outcome of a case, particularly if a key witness is involved.

Interrogatories are series of questions given to parties to an action to answer at their own convenience. Interrogatories have the advantage over depositions in that they provide more time for the gathering of the desired information. Generally, they are provided to attorneys by the opposing counsel for their client to answer. Thus, the attorney will have knowledge of them and will be of assistance in answering them. As a general rule, unlike depositions, which can be taken from anyone, interrogatories can be requested only from the parties to the legal action (i.e., defendant and plaintiff). Interrogatories do not require expensive transcribing of notes by a court reporter. If the person having the information lives at a distant location, interrogatories can be mailed and an expensive trip by counsel to attend the deposition hearing can be avoided. Objections can be raised to specific interrogatories to avoid answering them.

There is also a technique for obtaining access to documents under the control of a nonparty to the legal action. Generally, the degree of difficulty in obtaining the needed item from a nonparty depends on the nature of the item involved. If the item is of an easily transportable nature, such as documents or lightweight machinery, a subpoena *duces tecum* can be used to require nonparty witnesses to bring the material they control for inspection and copying when a deposition is being taken. Objections are also allowed for the production of documents. Privilege is one type of objection; another is that the other party has not shown that an attempt has been made to get the documents elsewhere. But even more important as objections are the assertions that the desired object does not exist, or that the party does not exercise any control over the document. Again, the attorney will have been provided with a copy of the order to produce and will make every effort to protect their client's interests.

Trial Preparation

As stated previously, the majority of tort liability cases involving roadways are negligence cases. The three elements necessary in every tort claim are:

(1) Existence of legal duty owed by the defendant to the plaintiff;
(2) A breach of that duty; and,
(3) The occurrence of damage or injury which is the foreseeable result of that breach of duty.

In effect, this means that the plaintiff, if he is to win a judgment in a basic negligence case, must prove:

(1) The defendant (agency) had a legal duty to use reasonable care towards the plaintiff (the injured party);

(2) The defendant breached that duty, (fell below the standard of care, thus committing an act of negligence);

(3) The damages (injuries, property damage, pain and suffering, loss of income, etc.) suffered by the plaintiff were the foreseeable result of that breach; and,.

(4) To recover damages suffered, the plaintiff must not have contributed to that negligence, or must have been equally or less at fault than the agency.

Using information collected by the investigation and evaluation program, information received in the depositions and interrogatories, and information obtained in the form of documents, the plaintiff's attorney prepares for trial and attempts to prove the above allegations in order to successfully win a lawsuit and recover damages.

Trial Proceedings

The first step of the trial is to select the jury. A jury list is prepared with names of possible jurors on it. The lawyers receive a copy of that jury list several days before trial and may look for any background information on the jurors. They are selected by a method known as voir dire, in which the court and the attorneys for each party examine the jurors as to their qualifications and their ability to be fair and impartial. Each side has the opportunity to talk to the jurors and ask questions. Parties can talk to them about the nature of the case to see if they are, in fact, qualified to serve as a juror, and to see if they have already made up their minds about the case.

Any reason to doubt or question the qualifications of a potential juror is known as a challenge for cause. An unlimited number of challenges for cause exist, such as the juror cannot speak, read, or write the English language. If the juror is successfully challenged and the court agrees, the individual juror is removed from the jury panel. After the lawyers have finished asking questions, the jurors leave and each lawyer may strike jurors' names off the list. Preemptory challenge is a challenge given without any reason. The plaintiff has the right to make his challenges, and so does the defendant. Then the clerk determines which jurors remain, and they, or a portion of them, are sworn in as the jury for the case.

The governmental entity in a suit has a right to designate a representative to sit through all of the proceedings, just as if she/he were a party to the lawsuit. A party to a lawsuit has a right to be present during all parts of the proceedings. In the case of a government agency, she/he can be your representative. It is a good idea to designate a representative for the entity who is competent and helpful during the trial. In most recent tort claims brought against public agencies individuals are named in the suit and become a party to the action. These individuals may or may not be selected to represent the agency in its defense of the action.

After selecting the jurors, the attorneys make opening statements. An opening statement is not evidence, but is used only to familiarize the jury with the essential facts in the case that each side expects to prove, in order that the jury may understand the overall picture of the case and the

relevancy of each piece of evidence as presented.

After opening statements, the plaintiff's case is presented first. Evidence is presented in court by means of examination of witnesses and the introduction of documents and other exhibits. The party that calls a witness to question them to establish facts about the case. After the party calling the witness has completed their direct examination, the other party is given the opportunity to cross-examine the same witness. Matters inquired into on cross-examination are not limited to those matters that were raised on direct examination, but must be relevant to the lawsuit. After cross-examination, the party calling the witness again has the opportunity to examine the witness. This examination is called redirect examination. Redirect examination is limited to the scope of those matters covered on cross-examination and is used to clarify matters raised on cross-examination. After redirect examination, the opposing party is allowed to recross-examine, with the corresponding limitation as to the scope of the questions. Redirect examination and recross-examination can continue as long as the court will allow.

After the plaintiff has examined all of their witnesses and presented their case they announce "rest." Then, the defendant puts on their case, going through the same process of direct examination, cross-examination, redirect examination, and recross-examination until they have examined all of their witnesses. Once the defendant is finished presenting, they also announce "rest." If there are no rebuttal witnesses by either side, both parties announce "close," which means they are finished with the presentation of evidence.

Witnesses called to a deposition or trial should be prepared to testify before ever entering the court room. A good lawyer will prepare each witness by explaining exactly what the process in detail. People selected as witnesses, who have never been to court, should inform their lawyer if they are uneasy about the process. It is the job of counsel to assist with the preparation or every witness. This will ensure a smoother testimonial process.

A witness should not be too quick in responding to questions. A pause before answering will enable the witness to organize their thoughts, assure that they properly understand the question, and, if needed, give their attorney the opportunity to raise an objection to the question. Accurate, but brief, responses are desirable. Questions should be answered in the same manner on direct examination and on cross-examination. A quick response with one form or the other may be noticed by the jury and jurors may feel that witnesses is hedging, unsure, or are in trouble.

When the presentation of evidence is finished, the jury is recessed and the judge and lawyers prepare a charge to the jury. A charge is a list of questions that the jury is called to answer. Both counsel for the plaintiff and the defendant have the opportunity to give the jury argument when the charge is read to the jury. The jury then retires and considers their verdict. Once a verdict is reached, it is signed by the jury and brought to the court. No more is required of the jury. The only thing the jury does is make a determination of the facts. The judge decides who is liable and who should or shouldn't pay what amount. The jury may determine, as a fact issue, how much the amount of damages are, although the judge decides the final award or judgment.

Process of Appeal

The judge also has the right to declare a mistrial and discharge the jury. They can indicate that the jury's decisions are inappropriate and request that the jurors deliberate again. Furthermore, the judge can declare judgment notwithstanding the verdict, disregard the juror's decisions, and pass judgment himself.

After judgment is entered, the dissatisfied party has 90 days in which to file a motion for a new trial. The first step in the appeal contains a statement of facts, which is a written record of everything that went on in the court. The statement of facts is taken to the Court of Civil Appeals, which is the next appellate court. After the statement of facts and transcript are filed, the party has 30 days to file the appellate's brief. The other party then has the opportunity to file their answer to the brief. The Court of Civil Appeals sets its hearing, reviews the case, and writes its opinion. From there the decision is upheld, goes back for retrial, or is considered for review by the Supreme Court.

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GLOSSARY OF TERMS

Abate: to decrease, reduce, remove, or destroy; to abate a nuisance is to remove or destroy the thing that causes it

Accused: a person charged with a crime or misdemeanor, the defendant in a criminal case.

Act: an enactment, as of a legislative body; a law or statute.

Action: a judicial proceeding to enforce or protect a right.

Actionable: giving legal grounds for an action, as trespass, slander, or breach of contract.

Actual cause: the reason the accident or damage occurred.

Actual notice: the receiving of a complaint or acknowledgment of said condition.

Admissible: of such nature that the court or judge must allow it to be introduced, as certain evidence or testimony.

Advocate: one that pleads the cause of another.

Affidavit: a voluntary statement or declaration of facts, written or printed and sworn to by the person making it before an officer authorized to administer oaths.

Affirm: to confirm, ratify, or approve. An appellate court (one which appeals are taken) may affirm the judgment or decree of a lower court.

Answer: (n.) a pleading by a defendant in a lawsuit in response to the summons or complaint.

Arbitrary: selected at random and without reason.

Bodily injury: section 2-9-101, MCA, means bodily injury, sickness, or disease sustained by any person which occurs during the policy period, including death.

Brief: a written statement prepared by the counsel arguing a case in appellate court; also used on occasion in trial court.

Capricious: apt to change suddenly or unpredictably.

Cause of action: the grounds upon which an action is based.

Civil action: a lawsuit brought by a private individual or group to recover money, property, to enforce or protect a civil right, to prevent or redress a civil wrong.

Civil procedure: prescribes the rules by which parties to civil lawsuits use the courts to settle their disputes.

Claim: section 2-9-101, MCA, means any claim against a governmental entity, for money damages only, which any person is legally entitled to recover as damages because of personal injury or property damage caused by a negligent or wrongful act or omission committed by any employee of the governmental entity while acting within the scope of his/her employment.

Comparative negligence: a legal doctrine applicable in negligence suits, according to which the negligence of the plaintiff as well as that of the defendant is taken into account. Damages are based upon the outcome of a comparison of the two and are thus proportioned.

Complainant: a person who files a bill of complaint; the party who starts a legal action; also called the plaintiff.

Conflict of laws: the disagreement between the laws of different states as it affects the rights of persons acting under the laws of more than one jurisdiction.

Constructive: assumed or inferred by legal interpretation.

Constructive notice: does not require specific notice of the defect. If a defect has existed for an unreasonable period of time, the agency should have discovered the defect, and therefore has constructive notice of its existence.

Contributory negligence: negligence doctrine in which persons only minutely responsible for their own injuries, cannot legally recover any damages.

Counterclaim: a claim alleged by a defendant, which seeks to reduce the plaintiff's claim.

Court action: not founded on criminal law or breach of contract. Tort action falls under this, and can be a combination of tort action and criminal action in certain cases. It is some character of abuse where one party injures another.

Criminal law: founded on statute and violation.

Criminal procedure: prescribes the rules of law for the apprehension, prosecution, and fixing of punishment of persons who have committed crimes.

De facto: a Latin expression meaning "in fact", accepted by the fact that it exists, rather than that it is according to law.

Deponent: a person who, under oath, gives testimony that is set down in writing.

Deposition: testimony of a witness taken outside a court and set down in writing for use as evidence in court.

Discretion: caution reserve in speech.

Discovery: the disclosure of facts, documents, and the like by one party to a suit at the request of the other party to a suit, for use as evidence in a case being prepared for trial.

Dismissal without prejudice: the dismissal of an action or proceeding in a way that does not prevent the plaintiff from bringing another suit based on the same cause of action.

Employee: section 2-9-101, MCA, means an officer, employee, or servant of a governmental entity, including elected or appointed officials, and persons acting on behalf of the governmental entity in any official capacity temporarily or permanently with or without compensation, but the term employee shall NOT mean a person or other legal entity while acting in the capacity of an *independent contractor* under contract to the governmental entity.

Enjoin: to direct, command, or forbid some act by court order (called an injunction).

Estoppel: a condition in which a person is prevented by law either from contradicting what he has previously stated or from stating or claiming what he has previously denied.

Extraneous: not forming an essential or vital part; having no relevance.

Governmental Entity: section 2-9-101, MCA, means and includes the state and political subdivisions as herein defined.

Governmental function: functions which government is legally required to perform. (vs. proprietary functions)

Hostile witness: a witness who, under direct examination, displays such prejudice or hostility toward the party that called that such a party is permitted to cross-examine him or her.

Immunities: the freedom from all tort liability as a favored defendant.

Independent contractor: a person who contracts to do certain work according to his or her own methods without control by the employer except as the result or product of the work.

Interrogatories: a series of questions in writing used in the judicial examination of a party of witnesses.

Joinder: the joining of two or more legal proceedings; the uniting of two or more persons as plaintiffs or defendants in one suit.

Joint and several: binding two or more persons both collectively and individually. Thus, a successful plaintiff under this doctrine could recover damages from any one defendant or from all of them.

Jurisdiction: the power to hear a case; courts that have the power to hear a case have jurisdiction over the case.

Liability: a legal obligation alleged against the state by a third party. Liability includes the activities of insured entities and not direct damage to or loss of property owned by the insured entity.

Litigation: the pursuit of a legal contest by judicial law.

Loss Control: the process of minimizing, at the least possible cost, the risk of losses to which an agency is exposed.

Malfeasance: the commission of an unlawful act or an act one has no right to commit; used most often to describe official misconduct.

Mandamus: a writ issued by courts directed to public officials or inferior courts commanding them to do or not to do something specified in the order that is within the scope of their or duties.

Ministerial duty: duties that are more likely to involve tasks that are to be executed with minimum leeway and individual judgment. Ministerial tasks are said not to require any evaluation or weighing of alternatives before performance of the assigned duty.

Misfeasance: the doing of a lawful act in an unlawful or improper way.

Mitigate: to make less severe; lessen.

Motion: an application to a court or judge to obtain an order or rule directing some act to be done.

Negligence: the failure to exercise the standard of care that would be expected of a normally reasonable and prudent person in a particular set of circumstances.

Nonfeasance: the failure to perform some act that one ought or is required to perform.

Occurrence: refers to personal injury or property damage resulting from a series of acts or omissions. It can mean acting or failing to act within the scope of one's employment. It is also an accident, including continuous or repeated exposure to conditions which result in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

Personal injury: section 2-9-101, MCA, means any injury sustained by any person to include bodily injury, property/monetary damages, and damage to reputation.

Plaintiff: the person who begins an action at law; the complaining party in an action.

Plea: a pleading; also, more specifically, a defendant's first pleading.

Pleading: the system of preparing formal written statements of a party to a legal action; a legal document, prepared by a lawyer and filed with the court, which sets forth the positions and contentions of a party. The purpose of pleading in civil actions is to define the issues of a lawsuit.

Precedent: an adjudged case or judicial decision that furnishes a rule or model for deciding a subsequent case that presents the same or similar legal problems.

Preponderance of evidence: in a case of contested facts, superiority in weight (determined by value and not amount) of the evidence presented by one side over the other (all that is required to prevail in a civil suit.)

Presumption of fact: an inference that affirms or denies the existence of some unknown fact, based on the existence of some fact that is already known or that has already been proved.

Property damage: the loss of use of tangible property including personal and real property.

Proprietary function: functions which can be provided by private persons.

Proximate cause: the legal cause of the injuries or damages that are sustained.

Punitive damages: damages awarded to a plaintiff over and above those to which he or she is entitled, because the defendant has violated one of his or her legal rights. Such damages are awarded to punish and thereby make an example of the defendant to deter others from acting in the same way.

Risk management: the systematic identification of exposures to the risk of loss and making decisions on the best methods for handling these exposures to minimize loss.

Scope of employment: employee was acting on behalf of a governmental unit, was performing assigned tasks.

Sovereign immunity: the immunity of a government from being sued in its own courts except with its consent, or other exception.

Stare decisis: the judicial policy of following legal principles established by previous court decisions.

State: section 2-9-101, MCA, means the State of Montana or any office, department, agency, authority, commission, board, institution, hospital, college, university, or other instrumentality thereof.

Statute of limitations: a statute that imposes time limits upon the right to sue in certain cases.

Stay: a stopping or suspension of judicial proceedings or the execution of a judgment.

Subpoena: a writ commanding a person to appear in court.

Subpoena duces tecum: a writ commanding a person to appear in court with a particular document or paper.

Tort: any private or civil wrong by act or omission, but not including breach of contract. Some torts may also be crimes.

Tortfeaser: one who commits a tort.

Venue: relates to and defines the particular territorial area within the state, county, or district in which the civil case or criminal prosecution should be filed and tried.

Writ: a written order issued by a court, commanding the person to whom it is addressed to do or not to do some act specified therein.

Appendix A

Accident Investigation Checklist

I. Accident Data

Date of Accident_____
Day of Accident _____
Time of Accident _____
Roadway Surface: Dry _____ Wet _____
Icy_____

Name of Roadway_____
Location: City_____
Country_____
Control_____ Section_____
Milepost _____

No. Injured _____
No. Fatalities_____
No. & Type of Vehicles Involved_____
_____
_____
_____

Description of Accident Location:

_____
_____
_____
_____

Construction or maintenance site at time of accident?

Yes_____ No_____

II. Roadway Operational Data

A. Posted Speed Limit_____

B. Volumes (Average Daily Traffic) for roadway involved. (Use year of accident and previous two years.)

Year_____ ADT_____
Year_____ ADT_____
Year_____ ADT_____

C. Skid Test Number for Site_____

Date taken_____ Value_____

Location where test was made:_____

_____

_____

D. Accident history of site (for year of accident and previous two years).

	Year _____	Year_____	Year_____
Fatal	_____	_____	_____
Inj.	_____	_____	_____
PDO	_____	_____	_____
Dry	_____	_____	_____
Wet	_____	_____	_____
Day	_____	_____	_____
Night	_____	_____	_____

E. Pavement Markings

Centerline:
_____Dual Yellow Solid
_____Single Yellow Dashed
_____Single Yellow Dashed with one Solid Yellow
_____Other_____
_____None

Lane Lines:
_____Solid White
_____Dashed White
_____None

Edgeline:
_____Yes
_____No

Two-way left-turn:
_____Yes
_____No

Left-turn lane: _____Yes
_____No

·Other_markings:_____

_____

_____

F. Signage

Describe signing used at site and on approaches thereto:

_____

_____

_____

_____

G. Signalization at site: _____Yes _____No

If yes, provide sketch of signal layout showing signal faces, phasings, and timings.

III. Roadway Geometrics & Surface Data

A. Roadway type:

_____ 4 or more lane divided
_____ 4 or more lane undivided
_____ 3 lane undivided
_____ 2 lane with shoulders
_____ 2 lane without shoulders
_____ Interchange ramp
_____ Other _____

_____

B. Surface data:

_____ Concrete
_____ Asphalitc concrete
_____ Seal coat
_____ Gravel, earth, etc.

Shoulder data:

_____ Concrete
_____ Asphaltic
_____ Seal coat
_____ Gravel, earth, etc.

Is there color contrast between main lanes and shoulders?

_____ Yes _____ No

C. Type of Median:

_____ Raised Median
_____ Flush Median
_____ No Median

D. Pavement dimensions:

TWO WAY:

Travel lane widths (start with lane next to centerline):

_____Ft, _____Ft, _____Ft, _____Ft (Circle direction: NB EB)
_____Ft, _____Ft, _____Ft, _____Ft (Circle direction: SB WB)

ONE WAY:

Travel lanes widths (start with inside lane to outside lane):

_____Ft, _____Ft, _____Ft, _____Ft (Circle direction: NB SB EB WB)
Median width: _____Ft
Shoulder widths: Inside_____Ft, Outside_____Ft,

E. Alignment:
_____ Horizontal tangent
_____ Horizontal curve (curve)
_____ Crest of vertical curve
_____ Sag of vertical curve
_____ Grade less than 2%
_____ Grade 2%–4%
_____ Grade >4%

F. Cross-slope: _____ (Vertical feet/Horizontal feet)

G. Superelevation present:

_____ Yes (Rate=_____Ft/Ft)
_____ No

IV. Other Factors

A. Is location lighted? _____Yes _____No

B. Is there a sight distance problem? _____Yes _____No

If yes,
explain:_____
_____
_____

C. Was fixed object struck? _____Yes _____No

If yes, describe object and its safety features (i.e., breakaway design) if applicable._____
_____
_____

V. Special Data

A. Pictures taken at site? _____Yes _____No

B. Pictures taken of vehicle? _____Yes _____No

C. Sketch of location made? _____Yes _____No

D. Sketch of accident showing skid marks and relative data provided?
_____Yes _____No

E. Plan and profile sheet of site available? _____Yes _____No

F. If wet weather accident, are rain records available for year of accident and each of two years prior?
_____Yes _____No

INVESTIGATOR_____DATE_____

VEHICLE NO._____

Year_____ Make_____ Model_____

License No._____ State _____ Color_____

Valid Inspection Sticker: _____Yes _____No _____Destroyed

*Tire tread depth and pressure (measure in 1/32 of inches and in psi)

Left front: _____" _____psi

Left rear: _____" _____psi

Right front: _____" _____psi

Right front: _____" _____psi

Describe damages: (include measurements from undamaged bumper or side of vehicle to greatest point of deformation)

_____

_____

_____

_____

Sketch of damaged vehicle made? _____Yes _____No

****

(*If tractor/trailer involved, measure all tire tread depths.)

If tractor/trailer involved, was trailer loaded? _____Yes _____No

If yes, describe type of material transported and how it was loaded._____

_____

_____

_____

Appendix B

Accident Reduction Percentages

Work Code	Countermeasure Description	Work Definition	Reduction Factor (%)
1	Eliminate Parking	Completely remove existing parking.	32
2	Install Edge Marking	Place edge lines where none existed previously.	25
3	Install Pavement Markings	Place complete pavement markings, ex-including crosswalks, in accordance with the TMUTCH where either no markings or nonstandard markings exist. Refer to W.C. 2 for edge marking, W.C. 27 for pedestrian crosswalks, W.C. 46 for centerline striping.	20
4	Install Median Barrier	Construct a metal or concrete median barrier where none existed previously.	65
5	Convert Median Barrier	Remove an existing metal median barrier system and install a concrete median barrier.	40
6	Install Traffic Buttons	Place raised non-reflectorized traffic buttons for improved visibility in daylight wet surface conditions. Buttons will be installed where no buttons existed previously. Refer to W.C. 11 for installation of reflectorized pavement markers.	30
7	Install Raised Median	Install a roadway divider using barrier curb.	25
8	Resurfacing	Provide a new roadway surface to increase pavement skid numbers.	42
9	Widen Paved Shoulder	Extend the existing paved shoulder to achieve desirable shoulder width. Refer to W.C. 62 for constructing a paved shoulder.	12
10	Widen Lane(s)	Provide additional width to the lane(s). Refer to W.C. 55 if adding a through lane.	30
11	Install Raised Reflective Pavement Markers	Place raised reflective pavement markers for improved visibility at night and in wet surface conditions. Markers will be installed where none existed previously. Refer to W.C. 6 for installation of traffic buttons.	25
12	Flatten Side Slope	Provide an embankment side slop of 6:1 or flatter.	46
13	Safety Lighting	Provide roadway lighting, either partial or continuous, where either none existed previously or major improvements are being made. Refer to W.C. 39 for intersection lighting.	25
14	Improve Vertical Alignment	Reconstruct the roadway to improve sight distance.	50

Work Code	Countermeasure Description	Work Definition	Reduction Factor (%)
15	Modernize Facility to Design Standards	Provide modernization to all features within the right-of-way to achieve current desirable standards. This includes work such as widening the travelway, widening the shoulders, constructing shoulders, flattening the side slopes, and treating roadside obstacles.	15
16	Improve Guardrail to Design Standards	Bring existing substandard guardrail into conformance with current design standards. Post spacing, end treatment and length of need should be considered. For length of need, if the existing length is less than 20% of the current design length, consider the project under W.C. 26 for installation of new guard-rail or W.C. 28 for installation of protection at bridge ends.	7
17	Entrance Ramp Modification	Reconstruct existing raps to conform with current desirable standards.	30
18	Exit Ramp Modification	Reconstruct existing ramps to conform with current desirable standards.	20
19	Safety Treatment Sign Support	Replace existing sign supports with break-away supports. Refer to W.C. 30 for the installation of attenuation systems.	45
20	Safety Treat Luminaire Supports	Replace existing luminaire supports with breakaway supports.	35
21	Install School Zone	Place school zones to include signing and/or pavement markings where none existed previously. Refer to W.C. 27 for pedestrian crosswalk markings.	20
22	Safety Treat Drainage Structures	Provide safety end treatments to crossroad and/or parallel drainage structures.	60
23	Safety Treat Fixed Objects	Remove, relocate or safety treat all fixed objects within the project limits, to include both point and continuous objects. Refer to W.C. 19, 20, 22, 29, 30, 59, or 64, 65, 66, if the project includes only one type of fixed object. Guardrail should be coded separately.	55
24	Install Delineators	Install post mounted delineators to provide guidance.	30
25	Increase Superelevation	Provide increased superelevation on an existing curve.	65
26	Install Protection	Provide guardrail or concrete traffic barrier where none existed previously. Refer to W.C. 16 for improving existing guardrail and W.C. 28 for the installation of protection at bridge ends.	30

Work Code	Countermeasure Description	Work Definition	Reduction Factor (%)
27	Install Pedestrian Crosswalk	Place pedestrian crosswalk markings where none existed previously. Refer to W.C. 21 for school zones, and W.C. 36 for pedestrians signal.	10
28	Install Protection at Bridge Ends	Provide guardrail, concrete traffic barrier or other protective system at bridge ends where no protection existed previously. Refer to W.C. 26 for the installation of new guardrail and W.C. 16 for improving existing guardrail.	50
29	Widen Drainage Structures to Clear Zone	Widen existing structures to provide the desirable clear zone.	30
30	Install Impact Attenuation System	Provide any of a variety of impact attenuators where none existed previously.	60
31	Modernize Bridgerail and Approach Guardrail	Improve existing substandard bridgerail and approach guardrail to current design standards. Post spacing end treatment and length of need should be considered. For length of need, if the existing length is less than 20% of the current design length, use W.C. 28, also.	15
31A	Install Protection at Bridge Ends		40
32	Construct Pedestrian Over/Under Pass	Construct a pedestrian crossover where none existed previously.	95
33	Modernize Intersection Flashing Beacon	Improve an existing flashing beacon, located at an intersection, to current design standards. Refer to W.C. 63 for non-intersection flashing beacon.	10
34	Install Stop Signs	Provide stop signs where none existed previously.	20
35	Install Advance Warning Signals	Provide flasher units, where none existed previously in advance of the identified problem areas.	*
36	Install Pedestrian Signal	Provide a pedestrian signal at an existing signalized location where no pedestrian phase exists, but pedestrian crosswalks are existing. Refer to W.C. 27 for installation of pedestrian crosswalks.	15
37	Improve Traffic Signals	Modernize existing intersection signals to current design standards. Refer to W.C. 33 for modernization of intersection flashing beacons.	22
38	Install Traffic Signal	Provide a traffic signal where none existed previously.	28

Work Code	Countermeasure Description	Work Definition	Reduction Factor (%)
39	Safety Lighting at Intersection	Install lighting at an intersection where either none existed previously or major improvements are proposed. Refer to W.C. 13 for general lighting.	75
40	Channelization	Install islands and/or pavement markings to control or prohibit vehicular movements. A sketch of the proposed channelization should be provided. Refer to W.C. 43 for intersection realignment.	*
41	Grade Separation	Construct vertical separation of intersecting roadways.	80
42	Construct Interchange	Construct vertical separation of intersecting roadways to include interconnecting ramps.	55
43	Realign Intersection	Improve an existing intersection by partial or complete relocation of the roadway(s). Refer to W.C. 40 for channelization, and W.C. 61 for improving horizontal alignments.	*
44	Construct Turn Arounds	Provide turn arounds at an intersection where none existed previously.	40
45	Increase Turning Radius	Provide an increased turning radius at an existing intersection.	10
46	Install Centerline Striping	Provide centerline striping where either no markings or nonstandard markings existed previously. Refer to W.C. 3 for complete pavement markings.	65
47	Add Acceleration/ Deceleration Lanes	Construct acceleration and/or deceleration lanes where none existed previously.	10
48	Add Left Turn Lane	Provide an exclusive left turn lane where none existed previously. The affected intersection approaches must be specified.	25
49	Add Left Turn Signal Phase	Provide a left turn signal phase at an existing signalized intersection with existing left turn lanes. Affected intersection approaches must be specified.	25
50	Install Intersection Flashing Beacon	Provide a flashing beacon at an intersection where a beacon did not exist previously.	50
51	Add Right Turn Lane	Provide an exclusive left turn lane where none existed previously. Affected intersection approaches must be specified.	25
51A	Add Left Turn Lane		35
52	Interconnect Signals	Provide a communication link between two or more adjacent signals in a corridor. Specify all signalized intersections to be included in the interconnection.	10

Work Code	Countermeasure Description	Work Definition	Reduction Factor (%)
52A	Add Left Turn Signal Phase		30
53	Install Continuous Turn Lane	Provide a continuous two-way left turn lane where none existed previously.	40
54	Lengthen Left Turn Lane	Provide additional length to an existing exclu-sive left turn lane. Affected intersection approaches must be specified.	40
55	Add Through Lane	Provide an additional travel lane.	28
56	Install Warning/Guide Signs	Provide advance signing for unusual or unexpected roadway features where no signing existed previously.	20
57	Lengthen Right Turn Lane	Provide additional length to an existing exclusive right turn lane. Affected intersection approaches must be specified.	40
58	Overheight Warning System	Install electronic devices to detect overheight loads.	65
59	Remove Signal Supports	Redesign signals to remove the existing supports from the median.	10
60	Close Crossover	Permanently close an existing crossover.	95
61	Improve Horizontal Alignment	Flatten existing curves. Refer to W.C. 25 for providing superelevation, and W.C. 43 for intersection realignment.	50
62	Construct Paved Shoulders	Provide paved shoulders to desirable width where no shoulders existed previously. Refer to W.C. 9 for widening paved shoulders.	15
63	Improve Advance Warning Signals	Bring existing flasher units into conformance with current design standards. Refer to W.C. 33 for modernization of intersection flashing beacons.	*
64	Remove Trees (4:1 or 3:1 w/recovery)	Remove trees from the clear zone. Consideration is given to the embankment slop rate and the clear recovery area gained after removal.	10
65	Remove Trees (6:1)	Remove trees from the clear zone. Considera-tion is given to the embankment slop rate and the clear recovery area gained after removal.	50
66	Widen Bridge	Provide additional width across an existing structure, either by rehabilitation or replace-ment. Specify existing bridge width, existing approach roadway width and roadway type (2 lane, 4 lane undivided, etc.).	55

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